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AMERICAN BUILDER

and Building Age

NAME REGISTERED U. S. PATENT OFFICE AND CANADIAN REGISTRAR OF TRADE MARK

OCTOBER, 1937

59th Year

Vol. 59—No. 10

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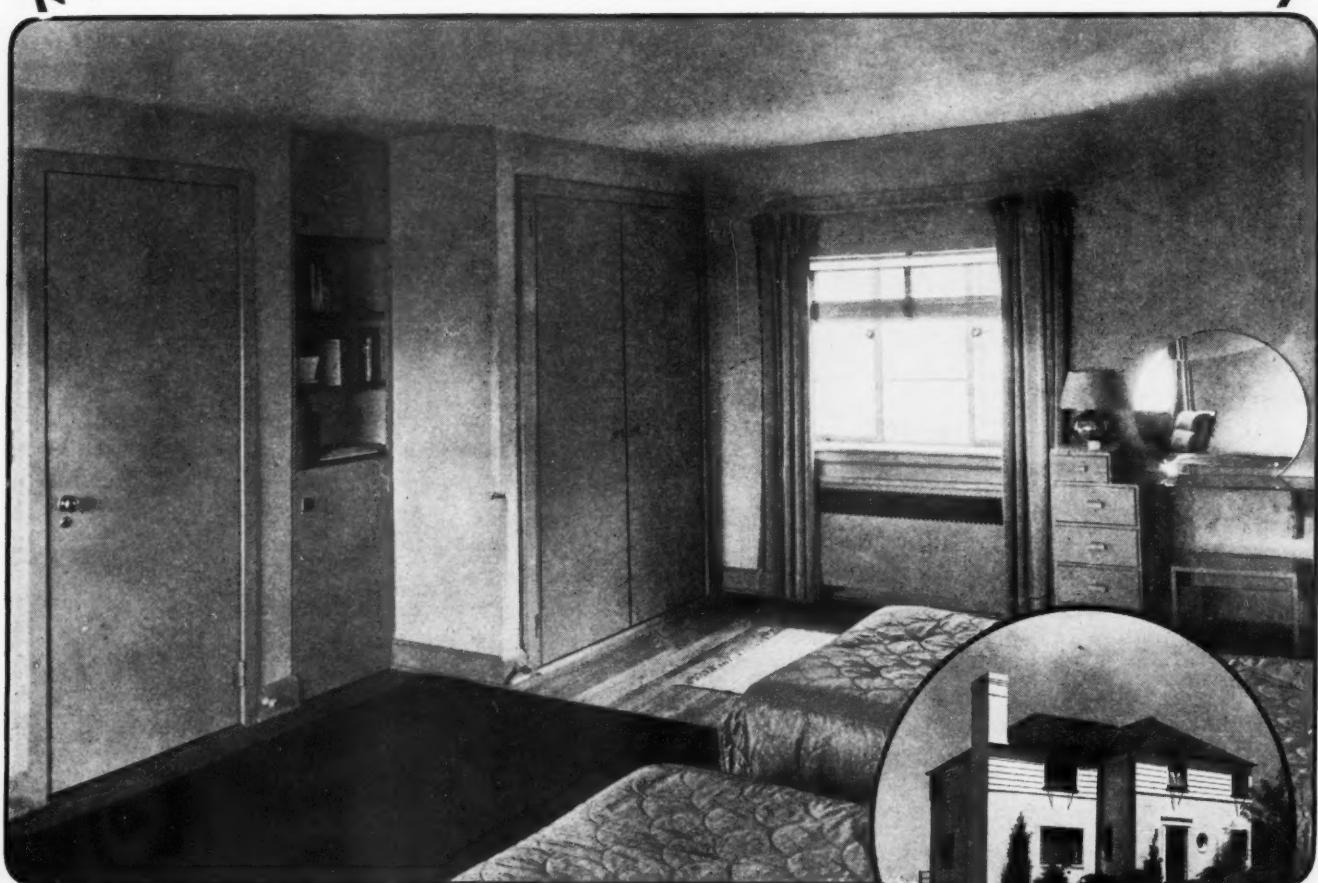
PAINÉ REZO DOORS

TRADE MARK
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* *A Better Door - For Less Money*

REZO has set a new standard of value in doors. It is a modern, sanitary, hardwood Flush door at no more cost installed than the common panel pine door of a few years ago.

Due to its unique construction features, modern styling and moderate cost, architects and contractors have found the REZO door equally appropriate for homes, institutions and commercial installations.



REZO doors are made with a girder type interlocked core overlaid with three-ply panel Faces—a light, strong, rigid door—strength without weight. Will not shrink, swell nor sag—air conditioned—sound resisting—has insulation value—sanded ready for painter's finish—trimmed to size—paper packaged—reasonably priced.

Low cost is made possible by specially designed machines and the most modern equipment for line production. Over a quarter million REZO doors are already in use in the U.S.A. and facilities are now being expanded at our Oshkosh plants to provide prompt service on unlimited quantities.

REZO doors are patented, produced and guaranteed by the same organization that introduced and manufactured Korelock, Klimax and Miracle doors. They can be obtained from all dealers, through jobbing connections, in all markets. Write us for information.

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ESTABLISHED 1855
OSHKOSH, WISCONSIN

PUBLISHER'S PAGE

"High Cost, Low Rent" Housing

THIS issue of the *American Builder* is devoted to an effort to help "sell" home building to the American people by proving that the present over-all cost of providing new homes is being grossly exaggerated.

"Build now" is a timely slogan. Rentals seem sure to increase so much in the years immediately ahead as to make excellent investments of houses and apartments built at present costs.

Among those who think building costs and rentals are too high for the poorer people in cities is the federal government; and, paradoxical as it may seem, the government is setting out to remedy the situation by *increasing building costs*. Private business is urging people to build at present costs. The government is starting to *increase* present costs because it believes that the poorer people in cities should be provided *low-rent* housing. It is a new theory in economics that the way to *reduce rentals* for some of the people is to *increase building costs* for all of the people; but that is the theory of the Wagner Housing Act recently passed by Congress.

IN appropriating taxpayers' money for government erection of "low-cost" housing, the Wagner Act repeatedly requires that the "going rate" of wages in each community shall be paid by the government. As a practical matter, this means the *highest nominal labor union rate*, whether it actually is now being paid on private construction or not. Wherever the government pays wages higher than those now actually prevailing it will force up wages and costs on private construction.

The housing to be built under the Wagner Act should not be called "low-cost" housing. It should be called "high-

cost, low rent" housing. But how can housing be made both "high cost" and "low rent?" By the simple Wagner Act process, already outlined, of having the government force up labor costs and at the same time require taxpayers in general to pay a large or major part of the rentals of those who occupy the high-cost housing that the government builds.

The benefit to those who will occupy government housing is obvious. But how about the effects on the rest of the people? They will be hit twice in the same place. First, they will have their taxes increased to help pay the rent of those who occupy government housing; and, second, because of the government's entrance of the housing field, they will have to bear an increase in the cost of the privately-built and owned housing that they occupy themselves.

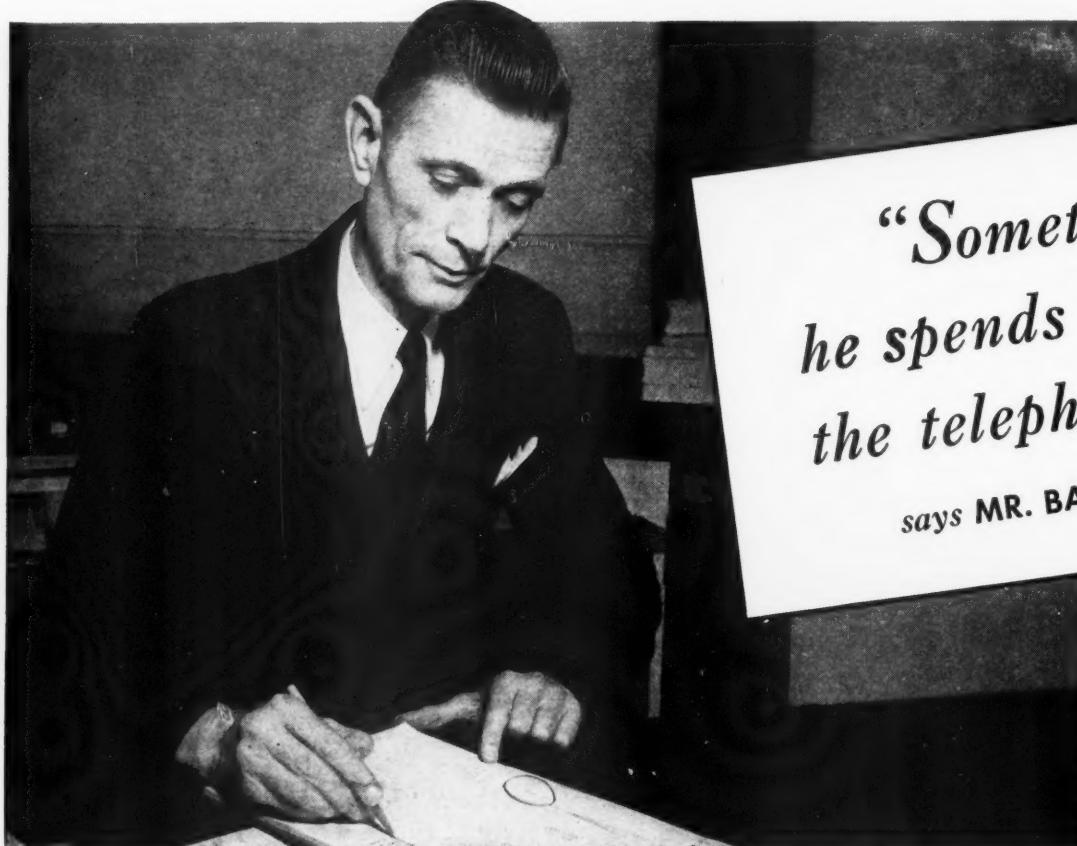
THE *American Builder* last month called the Wagner Housing Act an "experiment in Socialism." The Milwaukee Leader, an organ of the Socialist party, says in reply:

"Of course, it's Socialistic . . . Practically all good laws are Socialistic . . . Private interests operate for private profit . . . They've had all of the past to provide proper housing and have not done it . . . There will be adequate housing when it is handled as a socialistic proposition—and not until then."

The large majority of the people who are able and willing to pay their own rent, but not willing to have their government both increase their rent and tax them to pay the rents of others, will not think any better of the Wagner Act because of a Socialist paper's endorsement of it.

Samuel O. Dunn

What does a chief order clerk do on Sunday afternoons?



*“Sometimes
he spends it on
the telephone!”*

says MR. BAUMEISTER

PAUL C. Baumeister, Chief Order Clerk, has put through orders for nearly 670 million sacks of cement. This is enough cement to fill 800,000 railroad cars making a train 6,000 miles long, or equivalent to two solid trains of cement reaching from New York to San Francisco.

In cases of emergency, Mr. Baumeister is sometimes called upon to perform acts of special service for customers. Here's one example:

At 4 P. M. one Sunday afternoon the phone in the Baumeister home jingled. A salesman was on the line asking for delivery of three cars of

cement the following morning so that an important paving job could be finished before cold weather set in. The loading department of the plant was shut down. No loaders were on hand. There were no cars placed for loading. No locomotives for moving the cars were available. It seemed an impossible job.

But Baumeister took it in stride. He got on the phone, stayed there until 2:30 Monday morning. He phoned the packing superintendent who got his packers from their homes at overtime pay to load the cars. He

arranged with a belt line railroad to move the cars when loaded to a main line junction point. He arranged with the main line railroad to pick them up. This was done. At 6:00 A. M. Monday morning the cars were on the customer's siding ready for use.

Baumeister made 21 phone calls and worked over 10 hours to turn the trick. But everybody was happy—particularly the customer.

UNIVERSAL ATLAS CEMENT CO.
(United States Steel Corporation Subsidiary)
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Universal Atlas CEMENTS

AMERICAN BUILDER

AND BUILDING AGE

Good News for Today's Home Builders

PURPOSE OF THIS ISSUE: Emphasizing "More House for the Money," this issue of AMERICAN BUILDER presents extensive data on the high value of the 1937 home, its materials and equipment. Our purpose is to lead every building industry man to talk high value rather than high cost.

Tell the public how good today's homes are, not how expensive.

We think the issue will speak for itself. We do not support or advocate high or higher costs—in fact, this publication has always maintained that the lowest possible price commensurate with sound value brings, in the long run, the most benefit to everyone.

Houses, like stocks and most commodities a few years ago, were "dirt cheap," but practically no one bought houses at depression prices. It is not fair to contrast today's costs with those of 1932. Constant unfavorable publicity making such a comparison has reacted to the great damage of the building industry. Let's change the trend of public thinking in regard to building costs by talking present high values!

FACTS of unusual interest to those planning to build are now coming to the front—gaining wide recognition in spite of noisy and vicious propaganda denying them. These facts are, in a word:

*It is wise and prudent to build now, and
A better house can now be built for less.*

Universally it has been agreed that the time to build is on a rising market, when rents are advancing, employment is increasing and real estate activity is on the upturn—all of which conditions are now present and showing definite indications of actual "boom" times ahead for building—to confront later on those home-hungry individuals who delay now.

So, with this urge to build a new home or to buy a new home in this present cycle, the 1937 home seeker can be assured of getting good value for his money. This is "good news" which well informed building industry men are able to give to their clients and customers this year; they are promising and delivering a better house for less.

The reality of this fact rests on a number of factors, each an inseparable part

of the home building or buying process. One should consider all the costs involved in acquiring and improving a piece of property before arriving at a fixed opinion as to whether costs are up or down—or "too high." As a matter of fact some of the important items of home founding expense *prior* to the purchase of structural materials are now so greatly reduced as to offset completely the recent strengthening of certain material and labor costs.

Consider Four Cost Factors

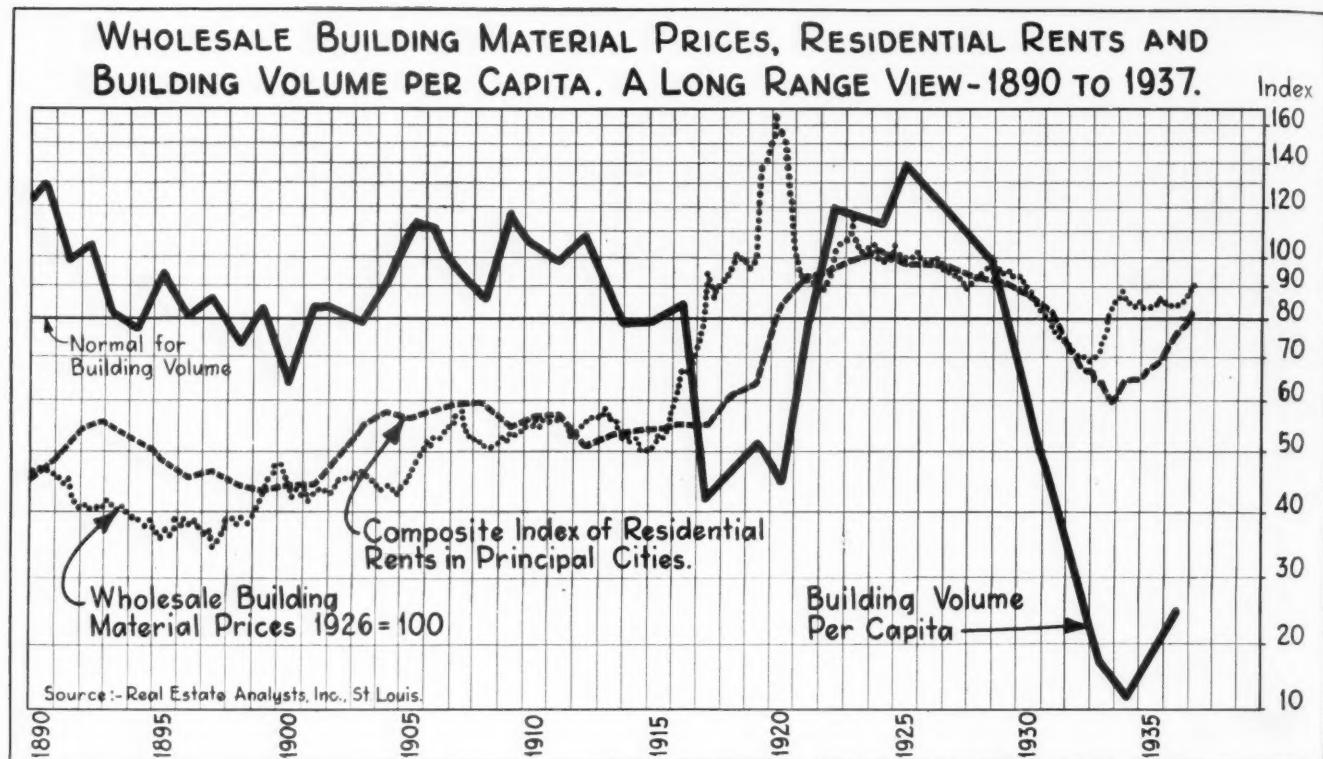
Very often the new home prospect looks into only the construction part of the proposed project; and even that he does not do thoroughly or with competent professional guidance. He makes some layman's inquiries as to lumber prices and local wage rates; and, if these strike him as "too high," he gives up the idea of building.

Now as a matter of fact the cost of materials installed on the job by skilled workmen under experienced management has very little relation to the price quoted the general public on some of the raw materials of construction. Furthermore, when all the costs are considered, it is found that some items that loom large in the public eye are really of minor importance in the total.

Refer to the diagram at the bottom of page 70, where the "building dollar" is divided into its four main parts: namely, financing, site purchase, sales cost and profit, and construction expense. Formerly more than half the building dollar went into the first three. Today these preliminary and overhead costs are so reduced that a much larger portion of the available funds—probably two-thirds—goes into actual construction, which means a larger, better equipped home for the same money or the same home for a less amount.

Facts About This Issue

85,000 COPIES of this More-House-for-the-Money Issue of *American Builder* are printed and circulated—This is the widest distribution of any building industry publication—Over 60,000 of these magazines go to regular annual subscribers; 12,000 go onto the newsstands; 3,500 copies of this special issue have been ordered in advance by building industry organizations for the use of their executives and field men; the remaining copies are being mailed by the publisher to influential newspapers, chambers of commerce, trade associations, and to civic and industrial leaders—It is believed that a wide distribution and full discussion of the facts and viewpoints presented in these pages will prove helpful and stimulating at this time.—THE EDITORS.



The whole view of new home costs shows a surprising array of favorable factors. Outlined briefly they are:

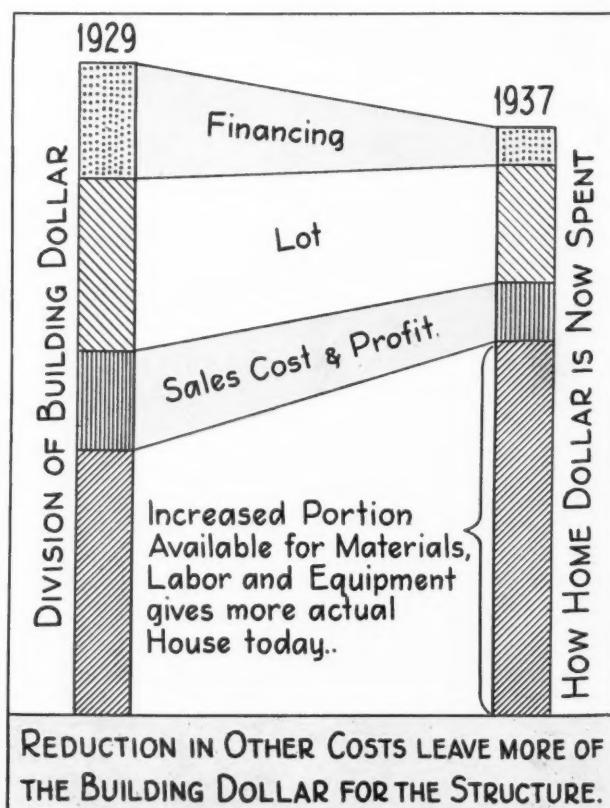
1. Lower financing costs under a single long-term mortgage in place of the old short term first, second and land contract system.
2. Building sites priced for use, not for speculation.
3. Construction costs cut through increased use of factory-produced units of materials and equipment.
4. Labor costs cut through increased operating efficiency due to modern tools and power equipment.
5. Lower costs from use of simplified house designs, planned for stock sizes of materials and parts, and elimination of useless ornament.
6. Economies arising from present vogue for smaller, more compact houses with multiple use of space for sleeping, dining and "living."
7. Savings in fuel costs from use of insulation and other present high standards of construction.
8. Savings in upkeep and maintenance costs from better design and use of proper long life materials.
9. Lower sales costs on houses built by operative builders, and smaller profit margin by contractors.
10. Lower tax costs through "out to the suburbs" and "into the country" movement.

The home seeking public can be well assured that it will receive competent service from today's building industry. Home planning, specifying, purchasing, building are highly involved, technical matters on which professional, experienced service is always needed—and is worth its cost. Such service reduces expense. Designed for modern living, today's home is more than the sum total of the raw materials used in its construction.

As with today's automobile, the public buying transportation and not steel and rubber, so with today's homes; the public is and should be concerned with the complete unit for livability, comfort, security and style

and not with the board foot price of lumber or the cost of a sack of portland cement. And, as the motor car producers turn out a better implement of transportation today for less, in spite of the advancing price of raw steel, so too, the efficient building industry of today is delivering a better home for less money than a decade ago.

Advancing rents and the mounting shortage of homes and apartments now definitely mark the end of the "free rent" period; home building and home ownership at present costs will certainly prove the wisest course.



Homes Are Bought on a Rising Market

Few People Have the Courage to Buy When Prices Are at Panic Lows—or Going Down. They Usually Wait Until Business Is Expanding, Incomes Increasing and Rent and Prices on the Upward Trend. Analysts See Large Home Building Volume Ahead.

BUSINESS analysts point out that most home building in this country has always taken place during a period of expanding business, rising prices and rising rents. To expect to get a home today at 1932 prices is like expecting to buy wheat, cotton or good stocks and bonds at 1932 prices—it can't be done. Building prices have increased along with the general price level, and as business continues to improve and expand will probably continue. In 1932 a house could be bought "dirt cheap"—but an infinitesimal number of people bought at that time. Now we are in a period of rising prices, increasing income and, most important, rising rents due to a shortage of housing. This is the type of situation which makes people build.

The determining factors in the sale of homes are rents and values. Rents have been rising steadily for several years, and in many communities the advance has been much greater than the advance in basic ma-

terial costs. When such a condition exists, home building is bound to flourish.

Study of the history of previous depressions and building booms shows a constant repetition of the pattern of rising costs, rising rents and rising volume. It should also be clearly pointed out that any great advance, such as has taken place in the last year, is also subject to minor recessions such as took place this summer, frequently due to rising costs running ahead of rising rents and values. It is frequently stated that as an A.B.C. proposition that most people will not build if it costs more to own such a house than to rent a comparable old one. This is largely true, but there is one factor—the modern improvements in a home that are impossible to get in a rented structure. This is a plus factor that should not be ignored.

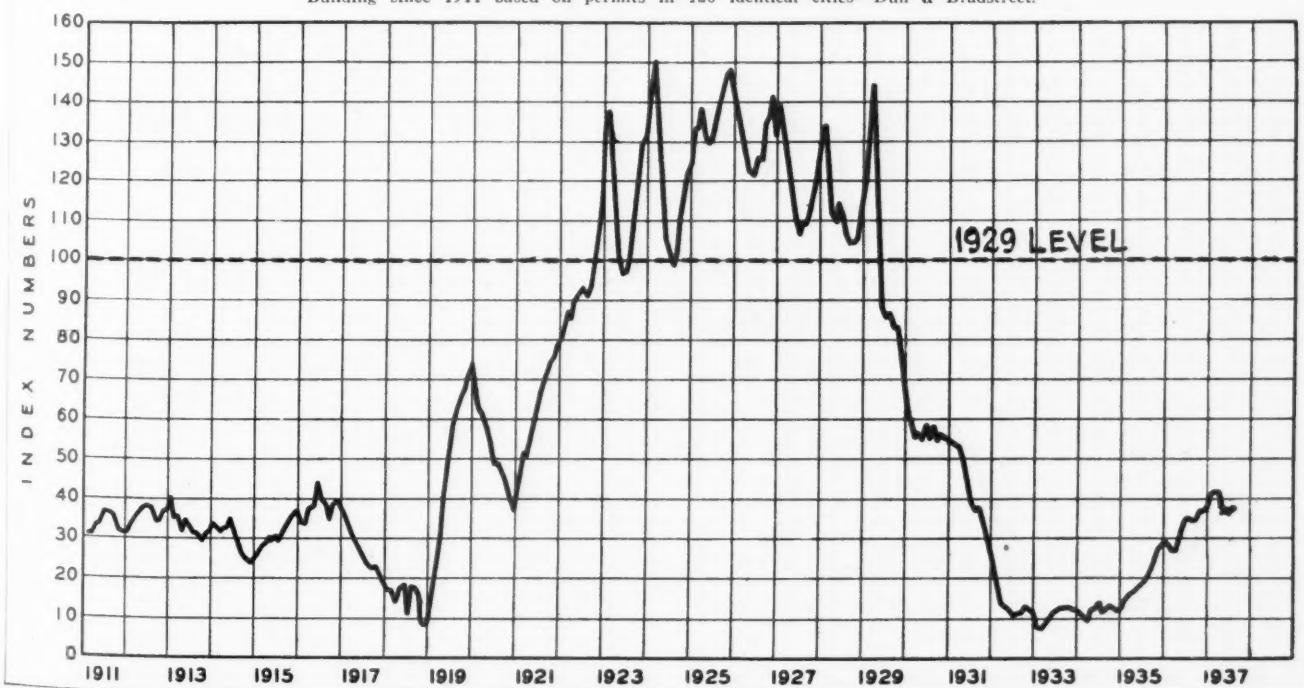
Looking back over the history of building and general business, so keenly and soundly presented by Mr. Roy W. Wenzlick of Real Estate Analyst, we see how clearly the relationship of building costs, rents and building volume has been repeated time and again. In 1863 building material prices rose sharply accompanied by slightly slower rise in rents. Building material prices reached a high peak, then leveled off somewhat at a new higher level for a number of years, during which construction mounted to a boom peak in 1870.

Again in 1898 building costs rose sharply, followed by a rise in rents and a consequent rise in building volume which reached boom proportions in 1906.

Coming to a period present building men can recall, following the World War, we find the high prices of 1919 and '20 went far ahead of rents and temporarily restricted building. By 1921 the price situation was adjusted, rents continued to climb and building volume took a sharp upward turn. Building costs again moved upward and remained on a high plateau (Continued to page 186)

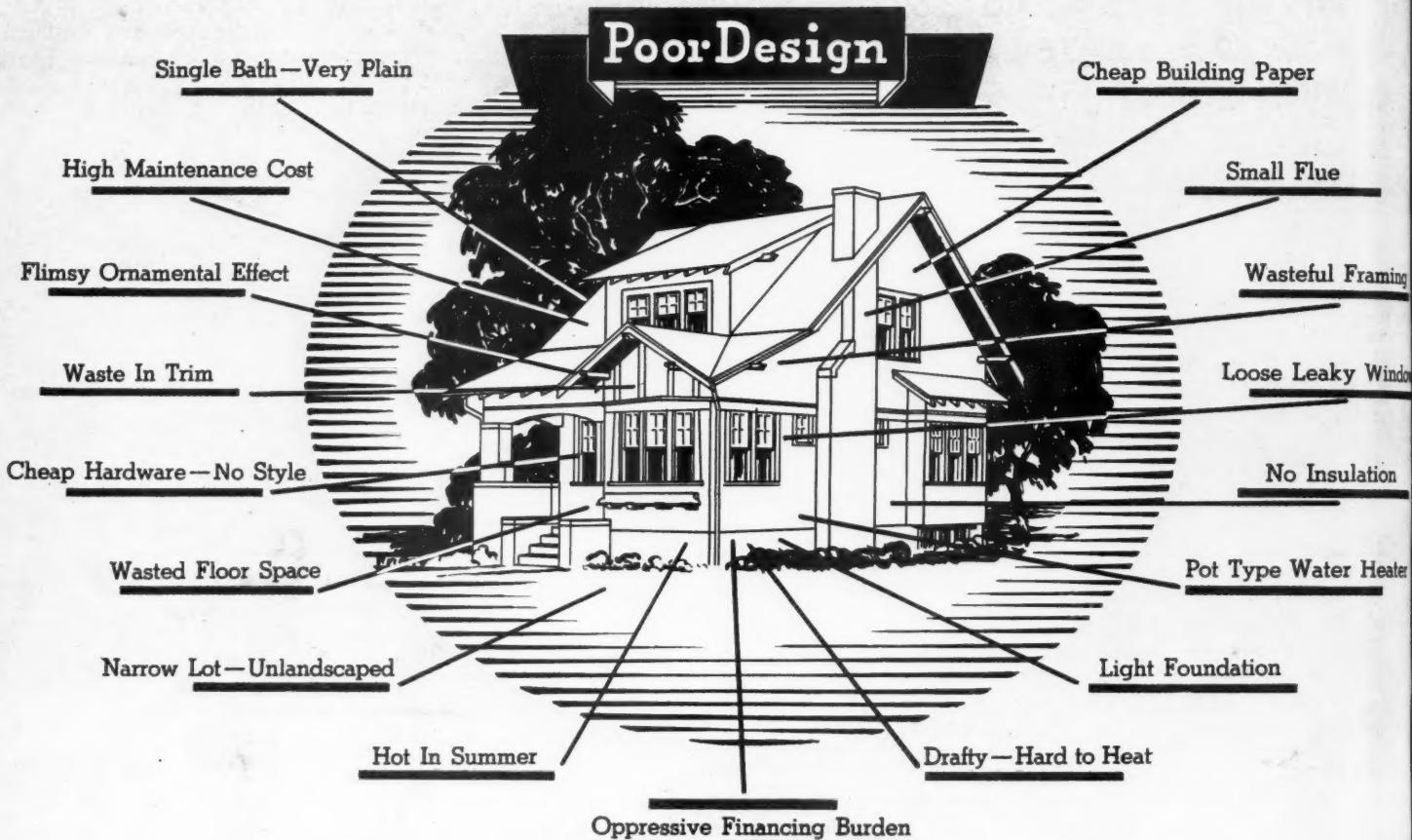
HOME BUILDING HAS JUST BEGUN TO RECOVER—STILL ABOUT ONE-THIRD OF 1929 LEVEL

Building since 1911 based on permits in 120 identical cities—Dun & Bradstreet.



Pictograph Analysis Shows Impressive Popular 1926-29 Home

(25 to 40% Higher Cost)



1926-29 homes were expensive . . .

(floor plan on p. 166)

THERE IS AS MUCH DIFFERENCE between the home of today and the 1926-29 house as there is between the Model T Ford and today's V-8. Just take a look at the popular house of 1926-29 above—it was an advance over previous years, but pretty expensive and poorly equipped in comparison with the high standards of 1937.

THE 1926-1929 HOUSE COST MORE to build, and it cost more to operate. Land, labor, materials, financing costs and profit were all greater than today.

AS TO VALUE AND COMFORT, just hark back a decade and note some of the features we did NOT have then. HEATING—was non-automatic—boilers and burners did not have the efficiency of today—no air conditioning, insulation—very little automatic equipment. KITCHENS

—none of the gleaming, scientific, labor-saving devices of today—few cabinets—small storage space. CLOSETS—too few and frequently dark, deep and difficult.

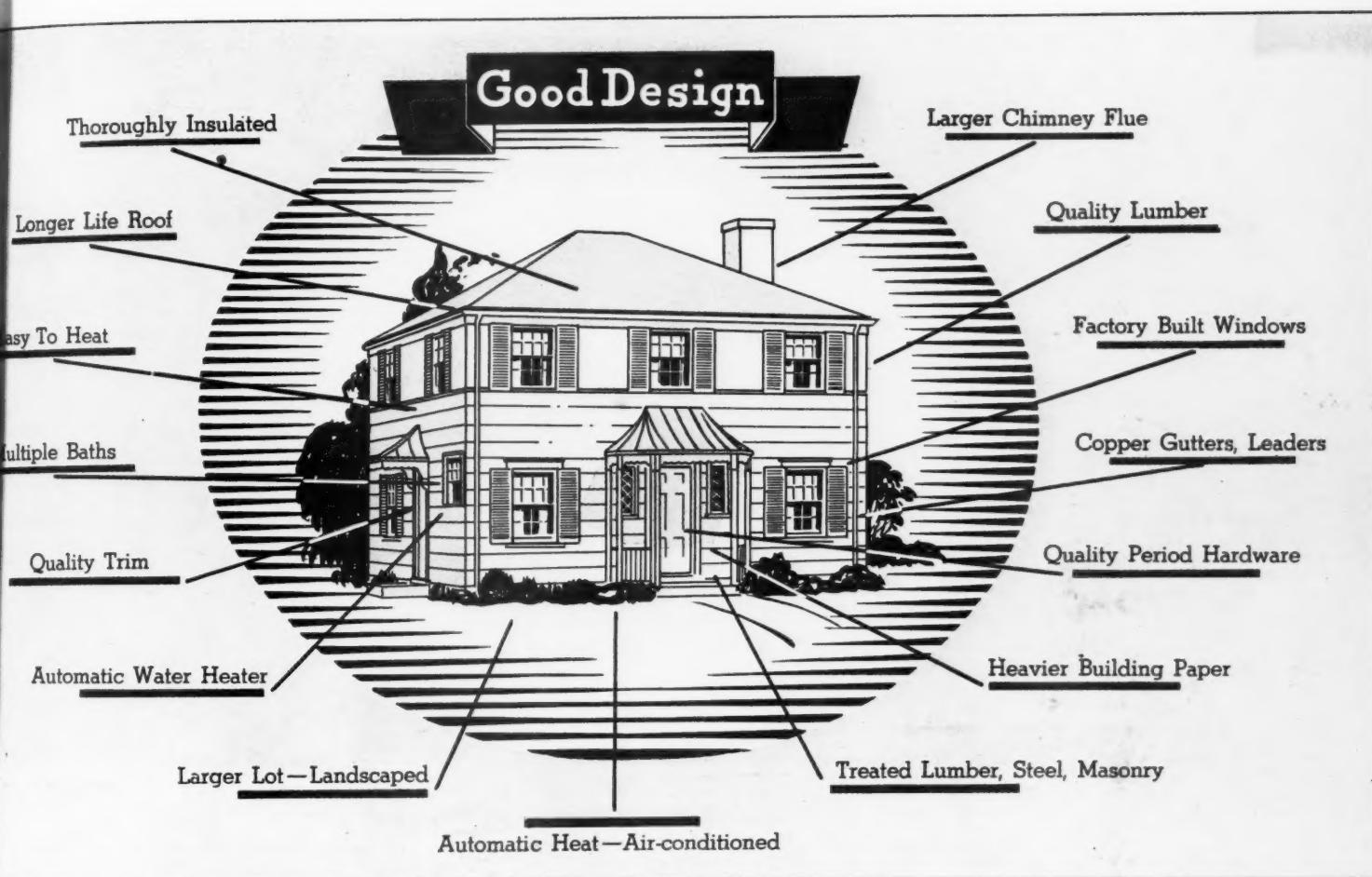
PLUMBING—USUALLY ONE BATH ONLY, and that quite plain. Little use of copper and brass pipe. INSULATION—few houses were properly insulated, and materials of insulation were not as scientifically developed as they are today. FLOOR PLANS—rooms were frequently boxy, with space wasted—poorly lighted—an architect was seldom used. See floor plans of above house on page 166 for a good sample of the plan of that time.

CONSTRUCTION—insufficient importance was given to heavy foundations, heavy building paper, tightly built windows, plaster cracks, time-resisting materials.

Si*n*crease in Home Values Since 1926-29

Efficient 1937 Home

(25 to 40% Greater Value)



1937 homes have high value . . .

(floor plan on p. 166)

CONSIDER NOW THE HIGH VALUE HOUSE of 1937. It is scientifically planned, and packed with improved labor-saving, comfort-giving features and equipment. Even though such items as air conditioning, insulation, step-saving kitchen, streamlined bathrooms, have been added, its total cost is still less than 1926. And maintenance cost has practically been cut in two.

BUILDERS ARE MORE EFFICIENT TODAY—use modern power equipment—employ good architects—waste less floor space—figure a smaller overhead and profit.

INSULATION—walls and ceilings thoroughly insulated with improved, scientifically developed products—weather-tight construction—greater use of heavy building paper—tight factory-built windows—weatherstripping.

TODAY'S HIGH VALUES INCLUDE: HEATING—automatic, highly efficient, healthful, attractive—air conditioning—concealed radiation. KITCHENS—pleasing—sanitary—efficient—cabinets to save steps and work—laid out and built scientifically.

PLUMBING—COPPER AND BRASS PIPE—beautifully styled fixtures—two and three bathrooms.

FINANCING—THE 1926-29 HOMES were burdened with an oppressive load of initial and continuing financing costs—second and third mortgages, land contracts, bonuses, renewals. Today's method costs 85% less.

FLOOR PLANS—compact, convenient, efficient—builders spend more time on planning. See page 166 for floor plan of the modern house above.



NEWSPAPERS from coast to coast have quoted American Builder editorials and articles on "reasonable costs"

"How GOOD," Not "How Costly" Is

American Builder's Program to Change Public Attitude on Building Values Takes Hold. Building Men Urged to Organize Local Campaigns

NO salesman has ever made headway talking about how expensive his product is. What does he do? He talks about how good it is. And he convinces his customer that because he has a sound, well built, economical, efficient product, it is a good value at the current price.

The *American Builder* campaign to change the trend of public thinking in regard to home costs was started four months ago, and reaches its peak with the publication of this special issue. Millions of people have been reading reprints of *American Builder* editorials and articles stating the real facts about today's home values. But to become fully effective, this campaign must be taken up by every building man in his own community.

The residential building industry has been put on the defensive by widespread price propaganda that says, "building costs are too high." The industry cannot and must not passively accept this kind of harmful publicity. A state of mind has already been built up in prospective

home buyers that is most harmful to the building business—and that is absolutely unjustified by the facts.

No one can or should deny that present material prices are higher than the panic lows of the depression. So are practically all commodities—stocks, bonds, and everything else the public buys.

Realizing, as most building men do, that costs are not likely to go down, but if anything, will probably continue upwards, the only alternative of building men who wish to see their industry advance is to focus the attention of the public on the *high quality*, well equipped, well built house of today, emphasizing its *value* rather than cost. If comparisons are to be made, the builder should point out how much more for the money the homeowner gets today than he did in the houses of 1926-1929.

When this contrast is made, the high value, splendid equipment and forward-looking nature of the 1937 house becomes immediately apparent. Like the automobile, the complete home of 1937 with its improved materials and equipment is a better product due to technical advances, not only in its component parts but in its plan and construction as well.

This is the story that *American Builder* has been presenting to the public. This is the theme to which this issue is devoted. This is the attitude of mind that every building man must adopt and pass on to the public.

As a result of editorials and articles, numerous local drives to change the trend of price thinking have already



LOCAL building groups urge publishers to bring out special editions on high home values to combat harmful price publicity

Keynote of Nation-Wide Campaign

gotten under way. Usually some forceful building industry man—a lumber dealer, a prominent builder or a financial man identified with construction—starts the ball rolling. He organizes the lumber dealers to finance co-operative advertising, buying space in the local newspapers to tell the story of current high values and refute the unfair publicity on exorbitant costs. One of the most recent examples is a full-page advertisement in the Sunday Herald-Press of Huntington, Ind., sponsored by five of the leading retail material dealers. A streamer headline says, "Home Costs Are NOT Higher—Based on Facts and Figures." A picture of a typical house is shown, with today's cost and itemized cost as estimated for 1925. Opposite this full-page ad are a series of forceful articles containing many facts supplied by *American Builder*. This type of advertising and newspaper article is already having a beneficial effect in changing public thinking on home costs.

Newspaper publicity must inevitably form an important part of any local drive. Many newspapers have been guilty of carelessness in publishing unfair and unfounded articles about how building costs are "too high." If any more of these appear, local building men must take the matter up with the publishers, showing them where they are wrong, point out that most of the published indices which indicate a rise in the price of certain basic building commodity do not show the whole story of home building costs. Because the price of cement or some other com-

modity goes up a few per cent does not mean the cost of a house goes up that much, as many people think.

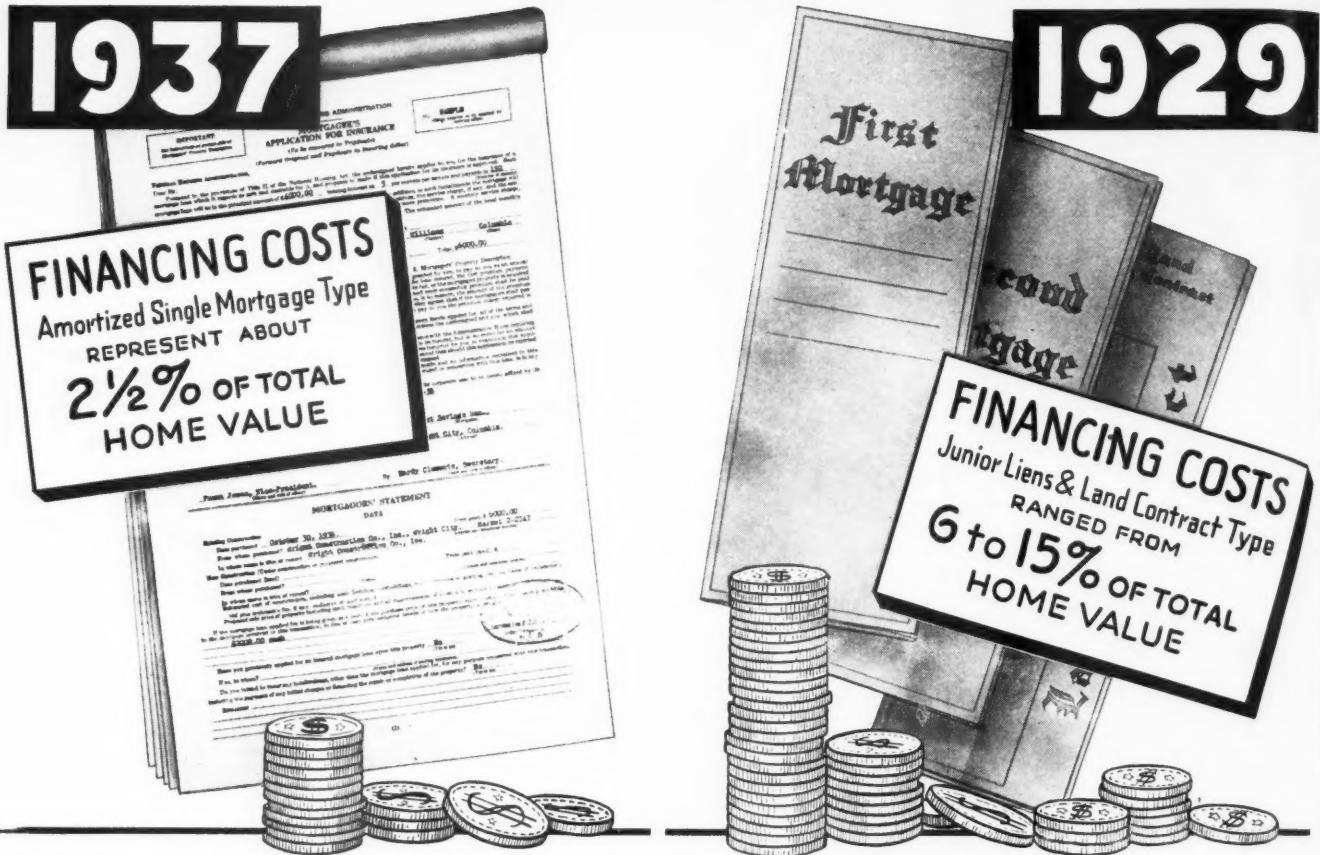
There is material in this special issue of *American Builder* to supply your local newspaper with a large number of interesting, informative, factual articles that present the matter of home costs and values in a true light. The entire contents of this issue are freely available to building men for this purpose. Write your own stories, or get some journalist friend to write them, using the facts in this issue. Take them to the local newspaper, pointing out the good that such articles can achieve.

There are numerous other ways in which building men can get their home town talking about *high values* rather

(Continued to page 170)

Do Your Part By:

1. Talking high home values instead of high costs.
2. Organizing meetings of local building men to combat unfair price publicity.
3. Using display newspaper advertising to tell about efficiency, good construction, better equipment, high value of 1937 home as contrasted with the 1926 home.
4. Persuading local publishers to bring out special "high value" editions—and back them up with advertising.



FINANCING of a \$10,000 home today would cost, on the basis of an \$8,000 80% FHA loan, \$234 including a commission of 2 1/2% amounting to \$20, an appraisal fee of \$24 and a survey charge of \$10. The total amounts to approximately 2 1/2% of the \$10,000 home valuation as compared to former costs ranging from 6% to 15%.

UNDER the old first and second mortgage system, the original cost of 80% financing—exclusive of renewals and on a conservative basis of a \$5,000 first and a \$3,000 second mortgage—would have been about \$600. Land contract financing with \$1,000 down on a \$10,000 property frequently ran as high as \$1,500 for the original money cost.

Why Present Financing Costs Allow Increased Home Values Today

By R. E. SANGSTER

CTHE primary purpose of this article is to show that a smaller portion of the building dollar is being spent for financing costs today than during the period preceding 1929; more value can be built into houses as a result of these savings. It is not the intention to go into a condemnatory tale of some former practices which everyone now realizes were unsound, nor will it be concerned with a lengthy discussion of present day methods and questionable changes in them—some sound practice existed formerly although not usually the case, and at present there undoubtedly still are cases of bad financing. The comparisons made in this article are between common practices then and those which are most prevalent in new residential financing today.

THE TRUE importance of financing as a factor in home building is now being fully realized by those concerned—the individual home owner, the professional builder, and the building industry at large. Along these lines it has been pointed out that if a sound mortgage program based on amortization, as is now the case, had been generally adopted twenty years ago, a great body of home owners would not have lost their properties through distress, builders and lending agencies would have been in a better position during the deflationary period, and home construction could have been better sustained during the recent depression. Former practices involving first and second mortgages and land contracts proved to be an insurmountable triple threat to safe home ownership, and over a recent period of time many builders, lenders and owners sustained terrific losses, notwithstanding the high money costs and high interest rates which were in effect.

In looking at the financing situation, three factors are involved; first, the original cost of securing building money (most important to the immediate question of values); second, later costs of refinancing which involved the hazards of home ownership due to uncertainties

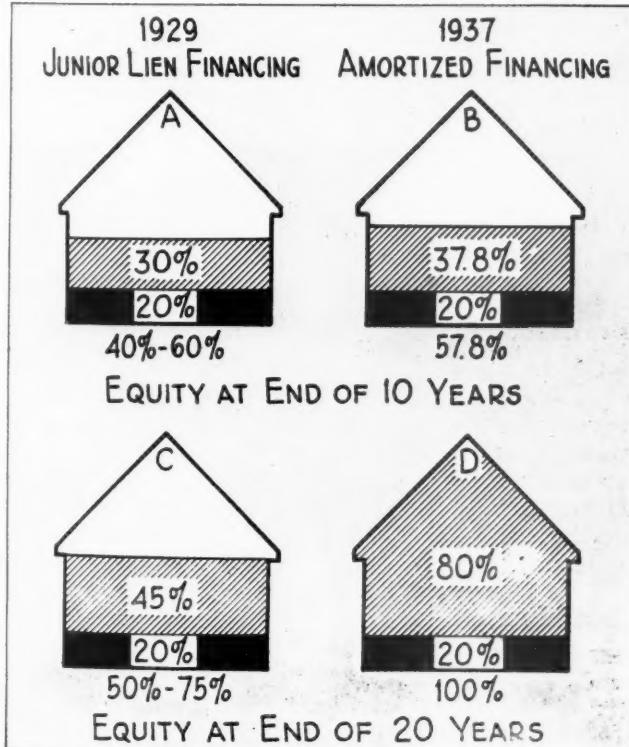
and availability; third, the rates of interest charged and the methods of principal payment which, unless on a sound basis, prove a constant menace to any sound building program.

A large part of today's increased home values results from savings in original financing costs, the first factor. Those dollars spent to pay excessive money costs could not be used for better materials, more equipment, larger sites and improved plans. There were many such dollars involved in the prices of 1929 houses—from 6 to 15 per cent, or from \$600 to \$1,500 in a \$10,000 home property, having been a common charge for original financing. This is pictorially presented in the illustration on the opposite page. It isn't too difficult to recall when contracts were sold at 40 per cent discount and when 15 to 25 per cent commission was charged on 3 to 5 year second mortgage financing. Such practice was common on homes in which the original equity was less than from 40 to 50 per cent; two-thirds or more of the homes purchased required junior financing.

The President's Conference on Home Building in 1932 reported that "the risk inherent where the owner's equity is small requires a high rate of return to the second mortgage lender. * * * This results in a padding of the original purchase price; for example, a house sold for \$8,000 with a nominal down payment, say of \$200 to \$400, might be obtained in many cases for nearer \$7,000 cash, or cash and a conservative second mortgage."

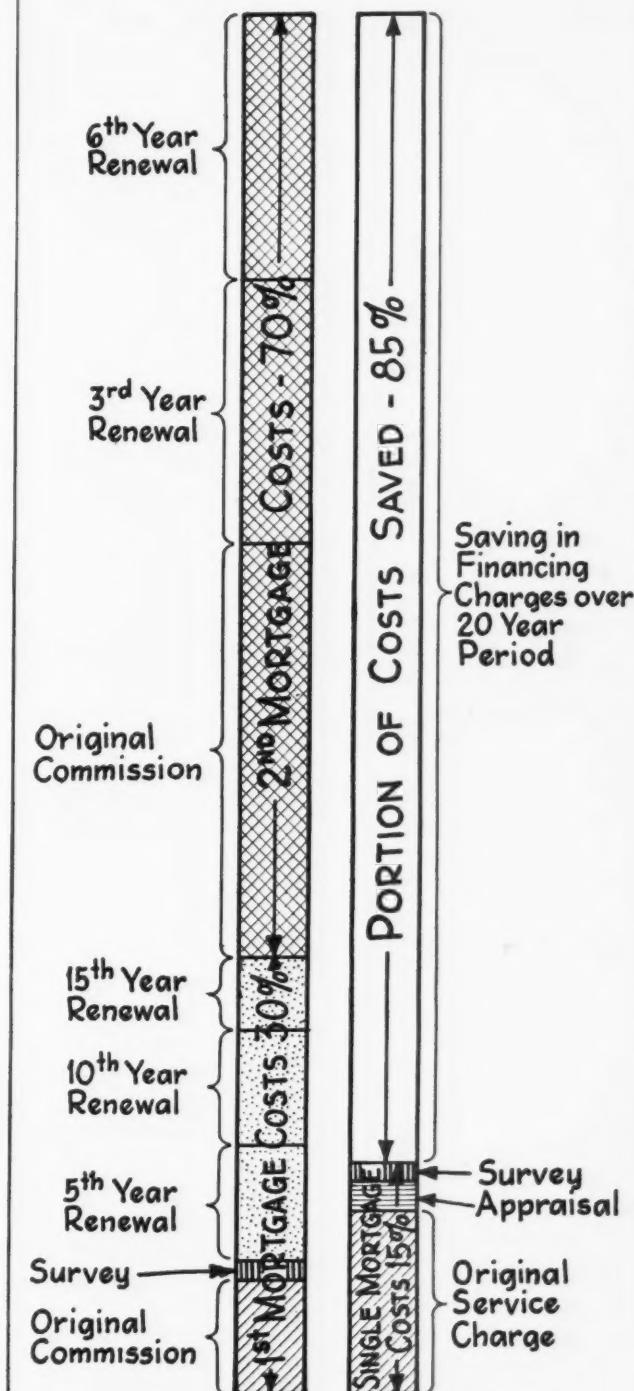
Today the cost of securing 80 per cent financing on this \$8,000 property would probably be less than \$200. In other words, about 10 per cent more actual value could be built into this house as a result of the saving.

The second factor involved is the matter of refinancing costs which occurred at very frequent intervals under the old plan. Often this was not duly considered at the time of purchase, but home owners found that, expensive though the first cost of securing mortgage money might



OWNER'S EQUITY at the end of 10 and 20 years under the two types of financing is indicated by shaded portions of the houses (original equity of 20% shown darker); percentage average ranges under 1929 houses express former uncertainties and indefiniteness.

1920-29 1st & 2nd
MORTGAGE SYSTEM
TOTAL COSTS 1937 AMORTIZED
SINGLE MORTGAGE
SYSTEM TOTAL COSTS



COMPARATIVE TOTAL COSTS
OF SECURING 80% FINANCING
FOR 20 YEARS

ABOVE: Left hand column is proportionately divided into 1929 cost segments to represent a conservative estimate of typical 50% 1st and 30% 2nd mortgage original and refinancing costs which might have been paid during a 20-year period on a \$10,000 property. Right hand column is divided to represent comparable costs today for 80% 20-year financing, now secured at a saving of about 85%.

have been, over a period of years the cost of refinancing amounted to several times as much.

The larger chart on page 77 shows how these mount up in a typical case of a \$10,000 house in which there is a 20 per cent equity and the financing is to run for twenty years. In this instance, present day financing methods as compared to former practice might save the owner about 85 per cent of the total money cost. This is purely hypothetical because, under the old system, there was no way of knowing just what would happen within the first twenty years.

Finally, this element of uncertainty as to the amount of equity owned at any one time has now been definitely removed to the benefit of all concerned. On the preceding page, a diagram based on a \$10,000 home illustrates this. The same equity of 20 per cent has been used in both cases. The mortgage financing, as under the 1929 system, is represented by a \$5,000 first and a \$3,000 second. Under the amortized system, there is an 80 per cent \$8,000 single mortgage. House A (1929) shows that at the end of ten years the total equity might range from 40 per cent to as much as 60 per cent providing the second mortgage had been paid off after two three-year renewals and possibly the first had been slightly reduced; 50 per cent (original 20 plus 30 in ten years) is assumed as a liberal average. On House B (1937) there has been paid off exactly 37.8 per cent of the mortgage, making a total equity of 57.8 per cent. Houses C and D show the equities at the end of twenty years under both systems.

While interest rates might not directly affect the orig-

inal home value as delivered, they are important to both purchaser and builder because lower rates allow the same budget allowance for housing to be spent for more house and less interest. Due to an influx of capital, interest rates are now at an all-time low in many sections of the country. The following table shows the size of monthly payments covering interest and principal on a \$1,000 amortized loan within a range of rates for building money today:

Table Showing Size of Monthly Repayments on a \$1,000 Amortized Loan at Various Interest Rates

Length of Loan	INTEREST				
	4%	4½%	5%	5½%	6%
5 years.....	\$18.42	\$18.65	\$18.87	\$19.10	\$19.33
8 years.....	12.19	12.43	12.66	12.90	13.14
10 years.....	10.13	10.37	10.61	10.85	11.10
12 years.....	8.76	9.01	9.25	9.50	9.76
15 years.....	7.40	7.65	7.91	8.17	8.44
20 years.....	6.06	6.33	6.60	6.88	7.17

Previously 6 per cent on first mortgages and 7 per cent on second were considered reasonable rates. However,

on second mortgages the rates as established at 7 per cent were fictitious due to discounting the commission. As an example, consider the rate paid on a typical second mortgage loan of \$2,000 over a period of three years at 7 per cent. The borrower received only \$1,700 after the commission was paid, and he pays on a principal of \$2,000. To repay this second mortgage in 36 monthly installments, these principal and interest payments would amount to \$61.80, with a total payment of \$2,224.80. In this case 15 per cent discount, or 5 per cent annually, actually adds more than 11 per cent to the normal 7 per cent. The difference that interest rates make can be readily seen by making a comparison of the columns in the table above. A 1 per cent reduction in interest rates buys 18½ per cent more house figured on an 18-year

(Continued to page 174)

How to Save \$3,402.75 On a \$5,000.00 Mortgage

THIS WAY

1. You borrow \$5,000.
2. You reduce the principal \$50 every 3 months.
3. In 25 years you pay only \$3,472.25 in interest at 5%.
4. In 25 years you owe nothing.

COST..... \$8,472.25

DIFFERENCE, \$3,402.75

NOT THIS WAY

1. You borrow \$5000.
2. You don't reduce the principal, but let the debt run.
3. In 25 years you pay \$6,875.00 in interest.
4. 25 years have passed and you still owe \$5,000.

COST..... \$11,875

The secret lies in reducing the principal. Thus each succeeding interest payment becomes smaller.

It's not too late to start. If your property is in Brooklyn, Queens or Nassau County we will gladly consider your application. The flexibility of our new mortgage policy permits a wide choice of amortization plans. No renewal fees or bonuses—lowest initial cost. Payments monthly or quarterly. Periods from 3 to 20 years. Send for our new booklet, "Four Ways to Borrow Mortgage Money."

The Dime Savings Bank of Brooklyn

DE KALB AVENUE AND FULTON STREET
Bensonhurst: 86th Street and 19th Avenue
Flatbush: Avenue J and Coney Island Avenue

BROOKLYN, NEW YORK

Assets Over \$213,400,000 * Established 1859

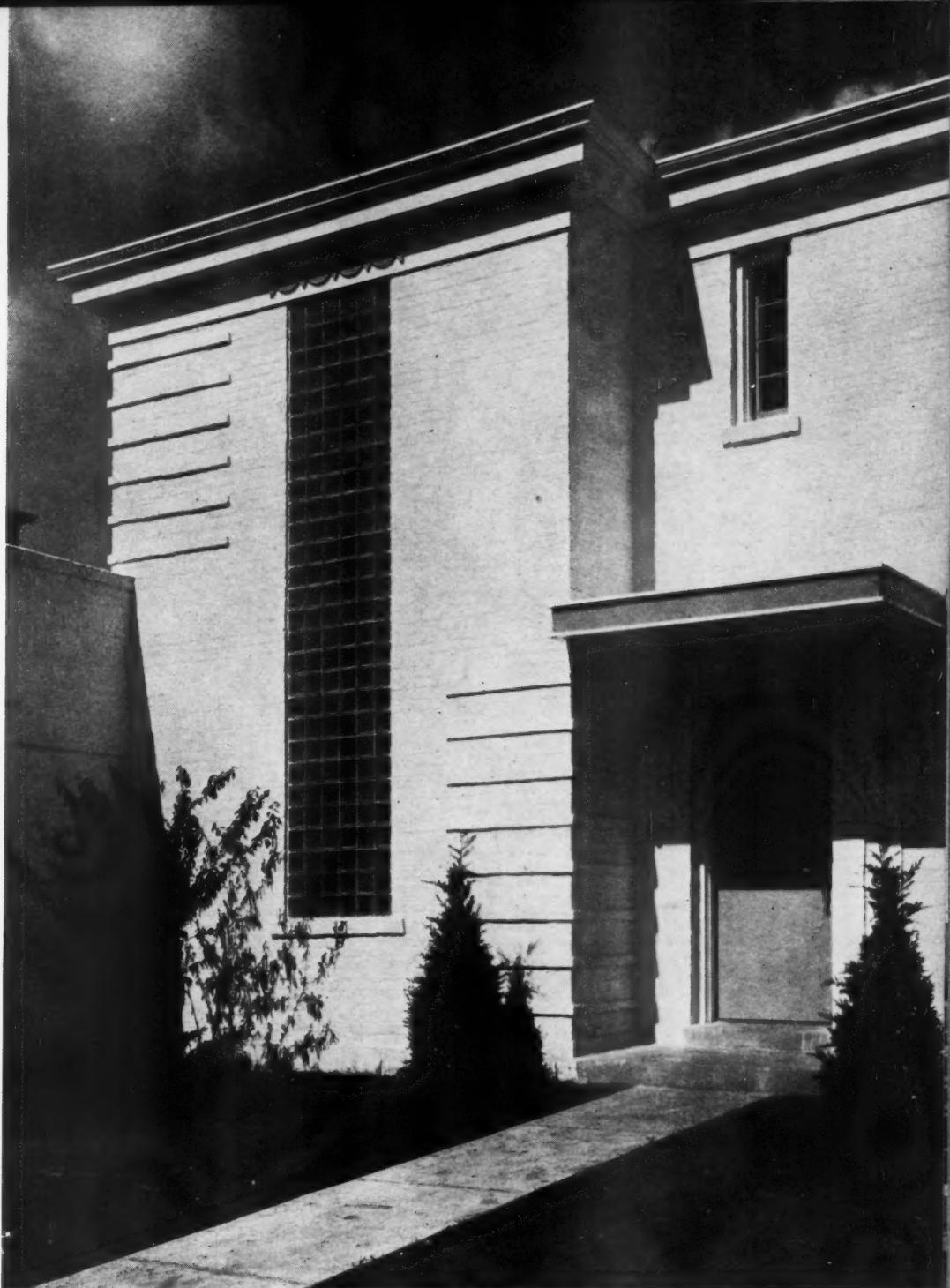
**TUNE IN
WMCA**
"At the Top of the Dial"
Monday
Wednesday
Friday
At 6:25 P.M.

★ ★ ★

LEFT: Reproduction of newspaper advertisement, shown in reduced size, which points out the difference in financing costs when borrowing \$5000 on an amortized basis as compared to unamortized loan practice. The Dime Savings Bank of Brooklyn is a leading home financing institution in New York area.

PLANS AND DETAILS
ON FOLLOWING PAGES

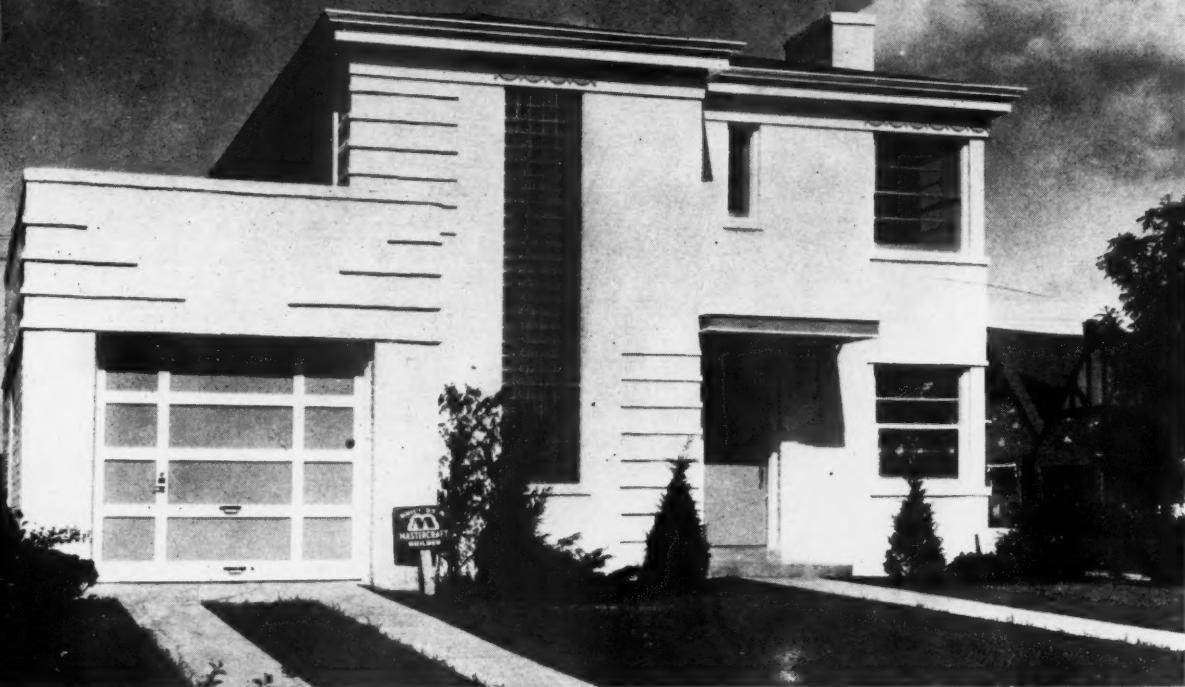
THIS STRIKING VIEW of an entrance to a modern home displays some of the advances in home construction during the past decade. The house was built in Scarsdale, a suburban development near Chicago, by W. C. Tackett, Inc. A combination of new and old materials—painted common brick walls and a glass block panel to light the stairwell—have been used in a pleasing modern manner. Details of design such as cornice and fascia trim, brick coursing and entrance canopy are very well handled.



SELECTED DESIGNS THAT OFFER MORE HOUSE FOR THE MONEY

A Record of the Progress Made Toward Better Home Values Which Offer More Livability and Better Appearance at a Reasonable Cost Is Well Illustrated by the Homes Chosen for This Month's Design Section and Shown on the Following Pages. They Demonstrate the American Builder Theme, "More House for the Money Today."





THIS 1937 HOUSE ABOVE SOLD FOR ALMOST \$2000 LESS THAN THE 1928 HOUSE AT THE LEFT. Both were built by W. C. Tackett, Inc., of Chicago, and are located in comparable neighborhoods. This modern type has six rooms as compared to five in the English style. The latter is typical of a class of moderately priced suburban homes built then. Dollars which were spent for stone trim, waste cubage and less efficient layout now buy extra value as shown in the plans opposite and the features which are listed below.

Modern Efficiency Home

**Designed and Built by W. C. Tackett, Inc.
Chicago. Located in Suburban Scarsdale**

THE quality and value found in this modern house are indicated by the following features:

Dry basements guaranteed by waterproofing and drain tile around all footings.

Recreation rooms paneled in knotty pine, with wood-burning fireplace.

Number one lumber used throughout.

Insulation—Celotex "Vaporseal" and rock wool.

Thick butt asphalt shingles laid over 15-pound felt.

Garage attached, heated, McKee overhead door.

Woodwork—finest quality. $1\frac{3}{4}$ " thick windows and

$1\frac{3}{4}$ " thick doors. Metal weatherstripping with bronze interlocking thresholds.

Metal lath ceilings and corners; U. S. Gypsum cement plaster. Tiled floors and walls of bath with porcelain accessories.

Electric ventilating fan in kitchen; reversible type.

All wiring in rigid conduit.

Electric fixtures by Victor Pearlman and Lightolier.

Plumbing fixtures by Kohler.

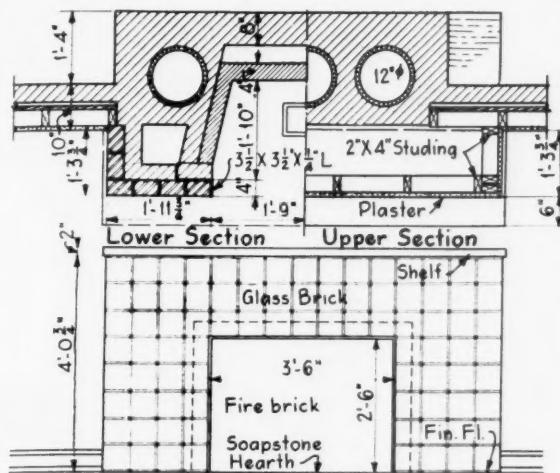
Automatic hot water heater.

American Radiator's "Sunbeam" air conditioning unit: complete change of air every 12 minutes.

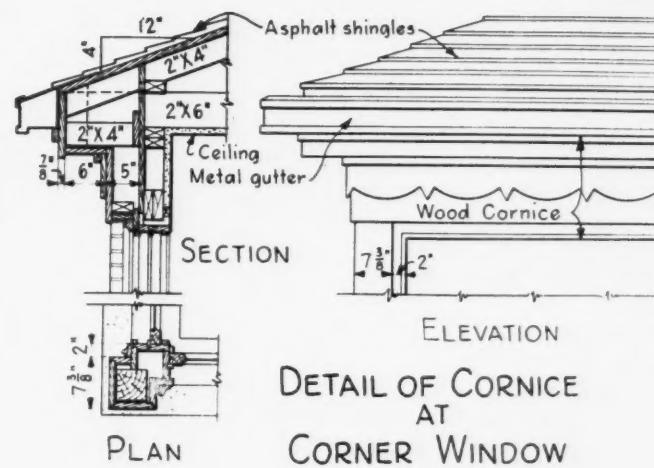
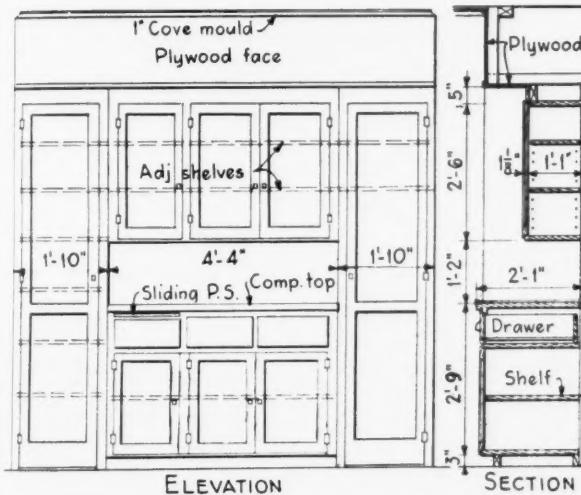
Solid brass hardware by Corbin.

Bronze screens, Bontex shades and Armstrong linoleum.

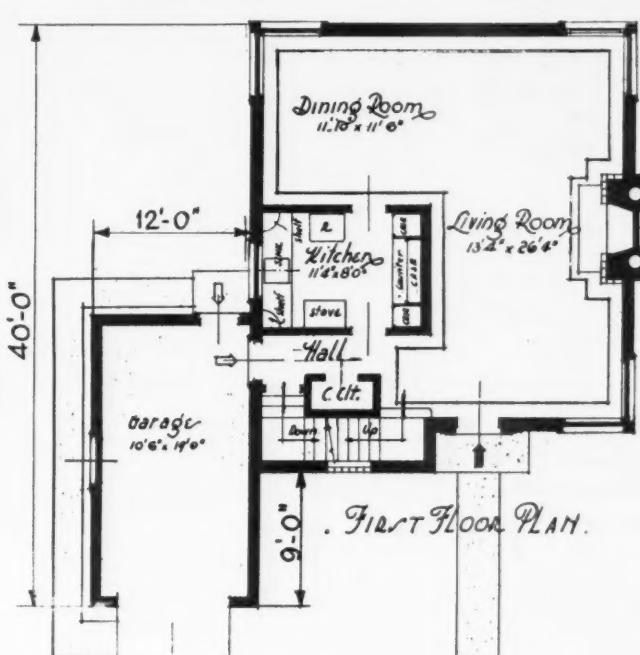
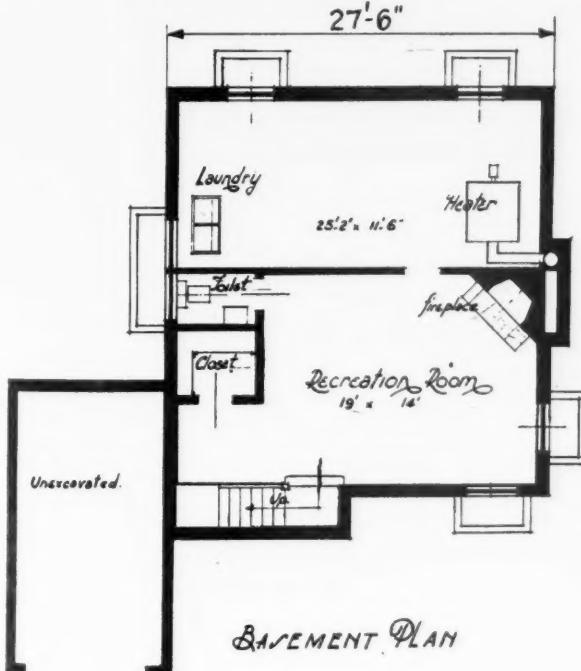
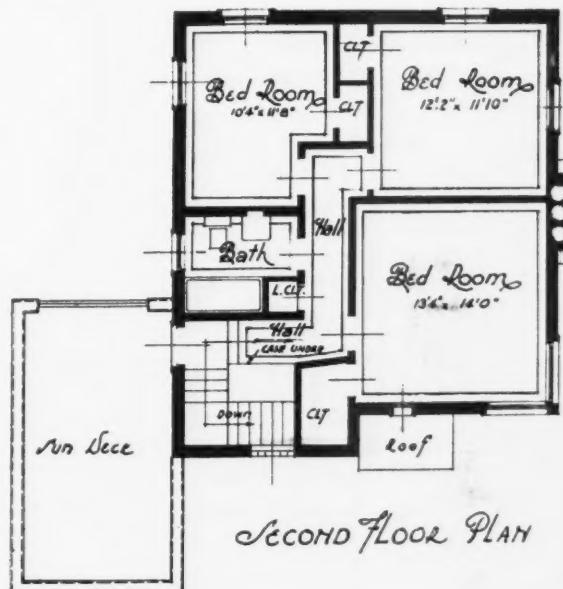
All painting 3-coat work, using highest quality workmanship and materials; color schemes by a recognized interior decorator.



LIVING ROOM MANTEL DETAILS

DETAIL OF CORNICE
AT
CORNER WINDOW

KITCHEN CASE DETAIL



Front Cover Home Illustrates High 1937 Value

**Four Bedrooms, Two Baths,
Large Living Room, Down-
stairs Lavatory, Excellent
Room Arrangement, in
Cubage of Only 27,750.
Cost Estimated at One-
Third Less Than 1929**

OUR front cover home, nestling in the New Jersey hillside near West Orange, is an excellent example of the high value set in the 1937 home by architects and builders. It was designed by Rowland C. Hunter of New York, who has created thousands of home designs and is one of the well known specialists in this field. It was built by Julian Leadbeater of Maplewood, N. J., a builder of long and sound experience. Here is a house built on speculation early this year which contains 4 good bedrooms and 2 baths, a large living room, dining room, breakfast alcove, downstairs lavatory and an excellent arrangement of rooms. Yet the cubic contents are only 27,750 feet.

This is an illustration of what Architect Hunter describes as "getting more usable area out of a given amount of cubage." In the past decade, Architect Hunter, like other men specializing in this work, has studied and restudied multitudes of plans to get the maximum amount from the building dollar. He points out that he and other architects who specialize in residential work are spending more time perfecting economical, livable, attractive designs. His plans are figured for the most economical use of equipment and modern materials without cutting or waste effort.

In contrasting this house with a similar type built in 1929, Architect Hunter says that the value is easily one-third greater. The actual dollar cost today is much less than 1929, but the contrast in construction and equipment is great. There are 2 large, beautifully appointed baths with colored fixtures and greatly improved equipment instead of the one very plain bath of 1929. There are 6 electric outlets in the kitchen alone, and for the house as a whole, a 50 percent increase in electrical outlets. This house is heavily insulated with rockwool, where a house of this type in 1929 was not insulated. There is a beautiful, efficient burner-boiler heating plant with concealed radiators, contrasted with the one-pipe steam unit of 1929. The kitchen of this house is a thing of beauty with elaborate, gleaming, modern cabinets and the entire kitchen laid out for efficiency, beauty and step-saving in a way unheard of in 1929.

Architect Hunter is an enthusiastic believer in the constant progress being made in home building. He believes that more builders are employing good architectural service and that the architects specializing in residential work are giving more for the money than ever before. Because of the importance of fitting the complicated, modern factory-



THE HOME of today represents tremendous advance in value, declares Architect R. C. Hunter, specialist in residential design, who describes better planning methods that help building.

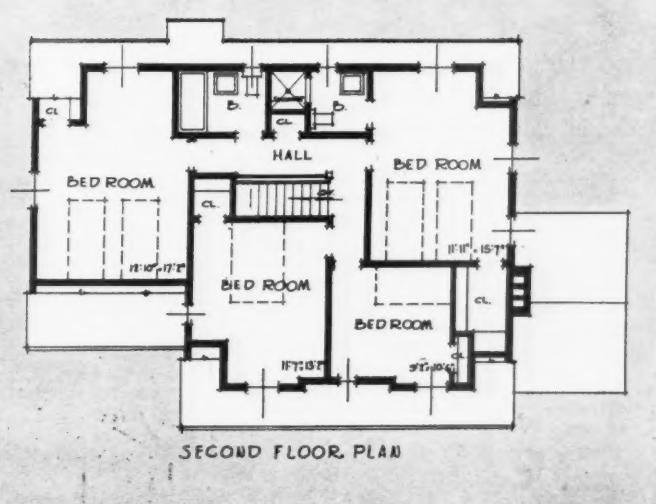
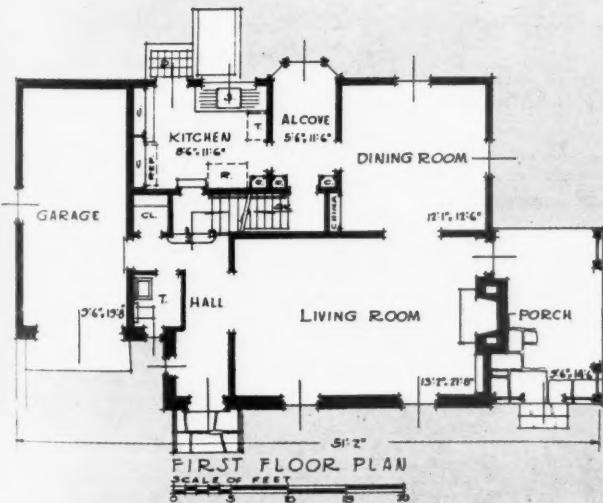


Architect R. C. Hunter Shows Contrast with 1929 Homes. Tells of Better Planning Methods, Improved Equipment, More Efficient Use of Floor Space That Gives Higher Value at Less Cost.

built equipment into a house of increasingly smaller cubic capacity, more time and more skill is required by the architect, he points out. He says building materials manufacturers are providing a greater selection of good stock materials, trim, etc., in standardized size. These standardized units enable the contractor to use his labor to better advantage. The experienced builders who have come through the depression he believes are building homes today in a more orderly, well planned fashion with less overhead and a moderate profit.

All of which adds up to one outstanding conclusion—the 1937 home is better planned, better built and represents a great increase in value over the house of 1929.

Cost Key is 1.960—136
—819—35—22—20



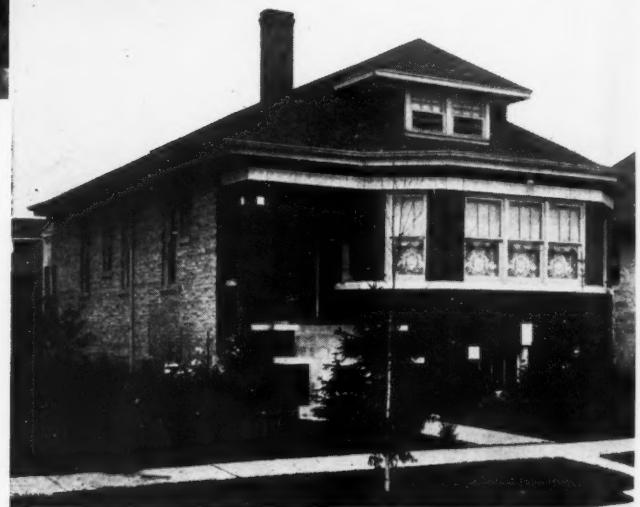
FLOOR PLAN of the American Builder front cover home designed by R. C. Hunter and built by Julian Leadbeater at West Orange, N.J., shows how maximum use has been made of every available inch of floor space. There are four good bedrooms, two baths and a downstairs lavatory—an unusual value in a house of only 27,750 cubic feet content. In equipment, construction and layout, the house marks far-reaching progress in home values since 1929. It has 50% more outlets, insulation, modern kitchen, large rooms.



From "Shirt-Front" To...

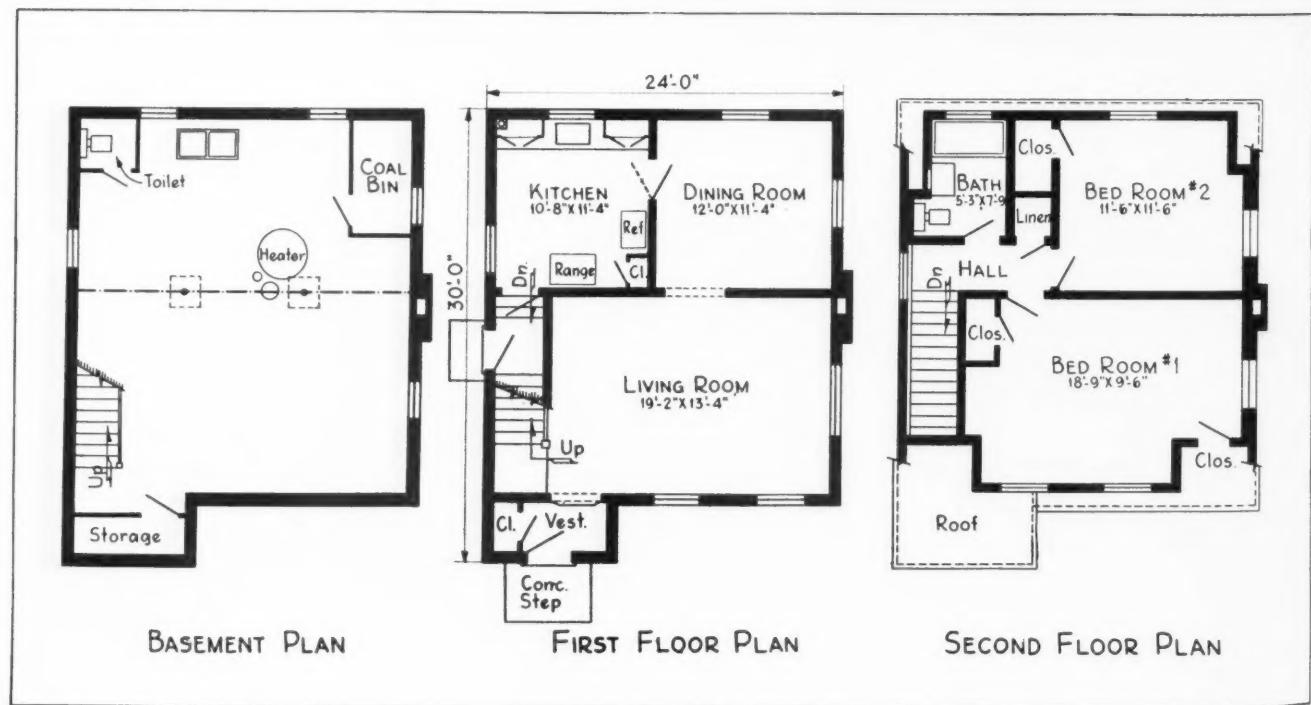
1937 Mills home (at left, plan below) offers many features which increase livability and add to attractiveness yet sells today for about 10% less than their 1929 bungalow.

1929 bungalow (below) built by Mills in their Westwood development indicates advances which assure increased value today through improved materials and better design.



Trim In Appearance— Efficient In Plan

House Shown Above: Built in Mills and Sons Ivanhoe Section, Chicago; Designed by H. F. Mitchell, Chicago



Front" Bungalows to Distinctive Homes

Mills and Sons, Nationally Known Chicago Builders, Are Marketing Houses Which Show the Greater Values That Are Now Possible

DURING the years just preceding 1930 in Mills' Westwood subdivision, hundreds of homes were erected and sold—homes which, according to the standard of those years, were considered good values by the buying public. To compare these homes of a decade ago with their present houses forcefully bears out the truth of *American Builder's* theme, "More House for the Money Today." Prices are lower; greater values are possible; new materials and equipment offer new standards of convenience and comfort; better planning allows space economy.

A vast improvement in the relation of houses to each other is equally as important as the changes in the houses themselves. Following a nation-wide practice of the former bungalow era, houses which differed only in minor exterior details were placed close together on narrow lots. Now each house is individually handled in a pleasing architectural style—there is no mass production monotony—and building sites are now 50 per cent larger. As a result more light and air, more privacy, better appearing streets and individuality which leads to pride of ownership are offered today.

Comparing some of the highlight items of these new Mills houses with similar features of 1929 really shows the advances which have been made. For example, in 1929, face brick was used only on the front; now, on all four sides. No. 1 common framing lumber was used; today, precision cut, kiln-dried, pre-shrunk Southern

THE ROW of houses seen at the right shows street of bungalows all nearly alike in exterior and plan as built in 1929. BELOW, Mills houses today are on larger lots, and have neat styling. French style house has plan similar to that of Dutch Colonial on opposite page.



yellow pine, 12% moisture content is definitely specified.

Further typical examples of increased value include: Cast iron sewers instead of tile; winter air conditioner in place of boiler; Fenestra steel casements, inside bronze screens, double strength A glass, as compared to wood sash, single strength glass and no screens; all birch millwork replacing gum and birch. Before, old style pantries were provided, now Whitehead de luxe kitchen cases and base with 12-foot monel top and sink are used; there was no kitchen linoleum in 1929 houses; now, all kitchen floors are covered with Armstrong inlaid linoleum.

In the baths, ceramic floors and colored tile walls replace plaster; Standard colored, acid-resisting vitreous china fixtures are used instead of old white, non-acid-resisting enameled iron type; Lawco custom medicine case of first quality with lumiline lighting succeeds former stock models. Likewise, higher quality electric materials and custom fixtures are used instead of stock type; about four times as many outlets are provided; a Square D flush type circuit breaker replaces the old fuse box; kitchen exhaust fan is now installed; illuminated house number is combined with built-in mail box; a two-tone 5-foot tubular "Telechime" replaces buzzer.

With these and other items which offer greater value, Mills houses today sell for about 10 PER CENT LESS than their 1929 houses of similar size.



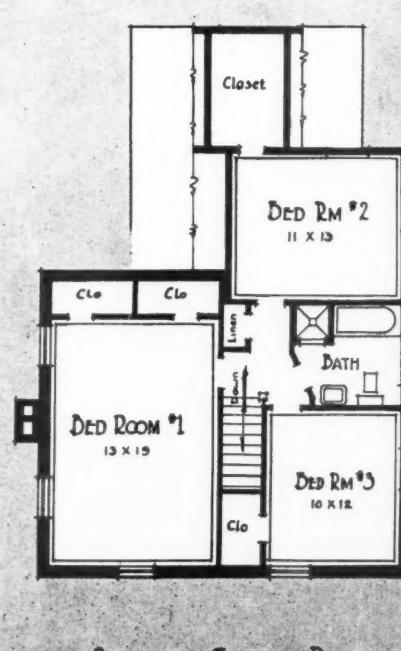
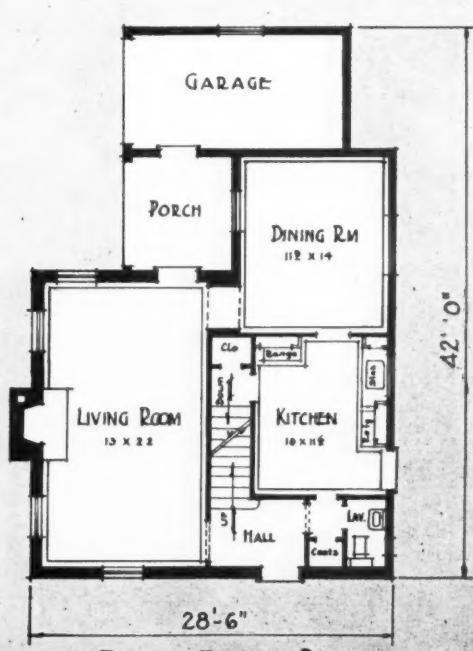


THE PRESCOTT built by Mott Brothers has 6 rooms, bath and lavatory, is designed for a corner lot in a landscaped, garden community.

86

33% Greater Value Than in 1926

Cost Key is 1.766—141—780—34—24—16



STYLING themselves community builders, Mott Brothers of Garden City, N.Y., have created a community that well illustrates the higher values available to the home builder of today as compared with what he could get in the 1926-29 era. Mott's 1937 houses are built to exacting specifications, are unusually well designed by a staff architect, are beautifully and efficiently equipped, and placed in a landscaped garden community in which the minimum sized lots are 60 feet.

The Mott houses of 1926 ranked well in the popular esteem of the day, but offer an interesting contrast with the values of 1937. They were on narrow lots, practically all alike, and built from a standard plan with no architectural character. They had none of the 1937 specifications such as copper pipe, metal windows, insulation, oil burners, slate roofs, and shower stalls.





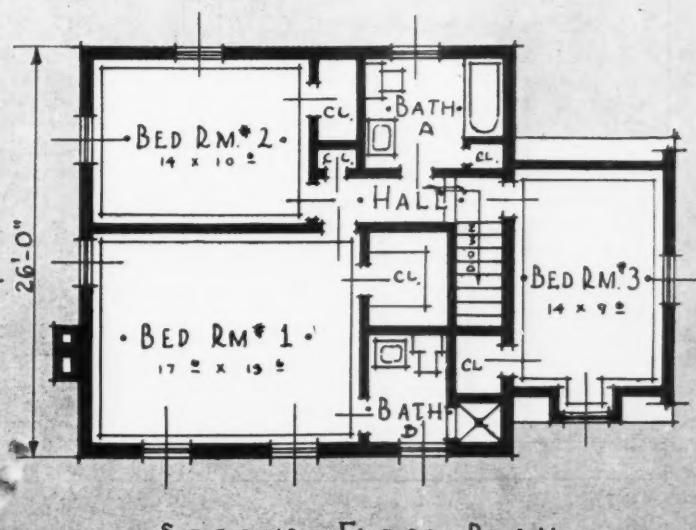
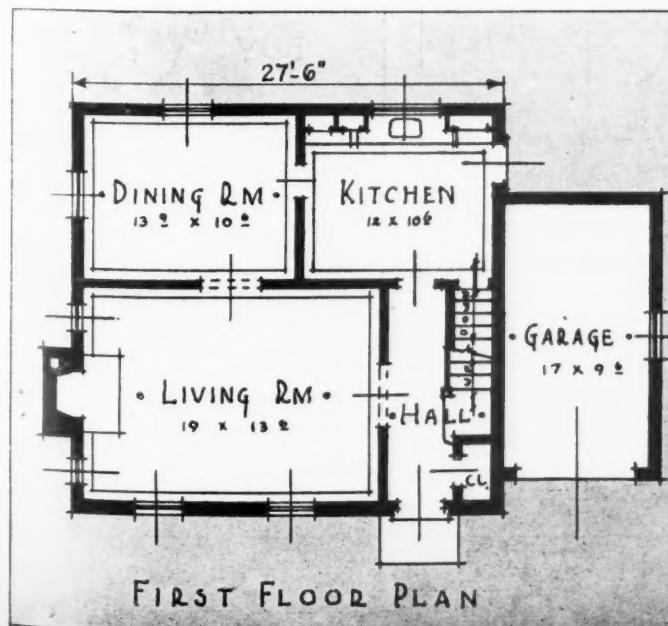
THE DORSET represents unusual value, with two baths, spacious rooms, good construction a 60-foot lot, fully landscaped.

The two houses above offer a further graphic illustration of modern efficient home planning. The Prescott at left has a big living room with three exposures and an attractive porch at rear. The kitchen is scientifically laid out, convenient to front door and lavatory. There are good closets, good circulation, good exposure in all rooms, with a minimum cubage of only 26,800.

The Dorset, on the right, is another good illustration of the 33 per cent greater value Mott is giving in 1937. With a cubage of only 25,360 feet, this little house has six good rooms and two baths. The bedroom over the garage is reached from the stair landing which is 2 steps

below the second floor level. A commodious front hall provides access direct to the kitchen. The house has an Arco-Petro oil burner with Richvar concealed radiators. The standard Mott specifications also include Standard plumbing fixtures in color, Chase solid brass valves and combination faucets, shower stalls with chromium trimmed glass door, copper tubing for hot and cold water lines with sweat fittings, copper valleys 14" wide with turned edges, Bangor slate roofs, Campbell steel windows, Armstrong linoleum, Thibaut wallpaper, diagonal sheathing, steel I-beam girders supported by steel H columns, rock wool insulation, wood-burning fireplace.

87



Building Materials Cost Less Today in Terms of Farm Products



IN 1932
WOULD
BUY

THEN

- 1—dollars \$328
- 2—No. 1 Yellow Pine 9 ft.
- 3—Brick 27
- 4—Portland Cement 60 lbs.
- 5—Hydrated Lime 47 lbs.
- 6—Building Sand 27 cu. yd.
- 7—White Lead 2.4 lb.
- 8—Compo. Shingles 5.4 sq. ft.
- 9—Gypsum Plaster 41 lbs.



IN 1937
WILL
BUY

NOW

- 1—dollars \$1.096
- 2—No. 1 Yellow Pine 24 ft.
- 3—Brick 64
- 4—Portland Cement 205 lbs.
- 5—Hydrated Lime 171 lbs.
- 6—Building Sand 56 cu. yd.
- 7—White Lead 9.1 lb.
- 8—Compo. Shingles 19.9 sq. ft.
- 9—Gypsum Plaster 128 lbs.



IN 1932
WOULD
BUY

THEN

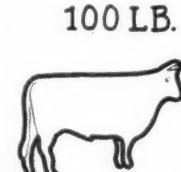
- 1—dollars \$.194
- 2—No. 1 Yellow Pine 5 ft.
- 3—Brick 16
- 4—Portland Cement 34 lbs.
- 5—Hydrated Lime 27 lbs.
- 6—Building Sand 16 cu. yd.
- 7—White Lead 1.4 lb.
- 8—Compo. Shingles 3.2 sq. ft.
- 9—Gypsum Plaster 24.2 lbs.



IN 1937
WILL
BUY

NOW

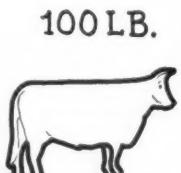
- 1—dollars \$.635
- 2—No. 1 Yellow Pine 14 ft.
- 3—Brick 36
- 4—Portland Cement 117 lbs.
- 5—Hydrated Lime 99 lbs.
- 6—Building Sand 32 cu. yd.
- 7—White Lead 5.3 lbs.
- 8—Compo. Shingles 11.5 sq. ft.
- 9—Gypsum Plaster 74.7 lbs.



IN 1932
WOULD
BUY

THEN

- 1—dollars \$5.45
- 2—No. 1 Yellow Pine 151 ft.
- 3—Brick 454
- 4—Portland Cement 1026 lbs. (2.7 bbl.)
- 5—Hydrated Lime 778 lbs.
- 6—Building Sand 4.4 cu. yd.
- 7—White Lead 41 lbs.
- 8—Compo. Shingles 90 sq. ft.
- 9—Gypsum Plaster 681 lbs.



IN 1937
WILL
BUY

NOW

- 1—dollars \$18.50
- 2—No. 1 Yellow Pine 411 ft.
- 3—Brick 1057
- 4—Portland Cement 3515 lbs. (9.25 bbl.)
- 5—Hydrated Lime 2890 lbs.
- 6—Building Sand 9 cu. yd.
- 7—White Lead 154 lbs.
- 8—Compo. Shingles 336 sq. ft.
- 9—Gypsum Plaster 2176 lbs.



IN 1932
WOULD
BUY

THEN

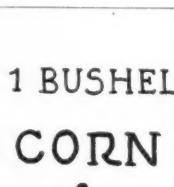
- 1—dollars \$5.90
- 2—No. 1 Yellow Pine 163 ft.
- 3—Brick 491
- 4—Portland Cement 1121 lbs. (2.95 bbl.)
- 5—Hydrated Lime 842 lbs.
- 6—Building Sand 4.8 cu. yd.
- 7—White Lead 44 lbs.
- 8—Compo. Shingles 98 sq. ft.
- 9—Gypsum Plaster 737 lbs.



IN 1937
WILL
BUY

NOW

- 1—dollars \$9.13
- 2—No. 1 Yellow Pine 203 ft.
- 3—Brick 521
- 4—Portland Cement 1732 lbs. (4.56 bbl.)
- 5—Hydrated Lime 1426 lbs.
- 6—Building Sand 4.6 cu. yd.
- 7—White Lead 76 lbs.
- 8—Compo. Shingles 166 sq. ft.
- 9—Gypsum Plaster 1074 lbs.



IN 1932
WOULD
BUY

THEN

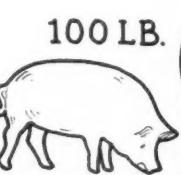
- 1—dollars \$.194
- 2—No. 1 Yellow Pine 5 ft.
- 3—Brick 16
- 4—Portland Cement 34 lbs.
- 5—Hydrated Lime 27 lbs.
- 6—Building Sand 16 cu. yd.
- 7—White Lead 1.4 lb.
- 8—Compo. Shingles 3.2 sq. ft.
- 9—Gypsum Plaster 24.2 lbs.



IN 1937
WILL
BUY

NOW

- 1—dollars \$.635
- 2—No. 1 Yellow Pine 14 ft.
- 3—Brick 36
- 4—Portland Cement 117 lbs.
- 5—Hydrated Lime 99 lbs.
- 6—Building Sand 32 cu. yd.
- 7—White Lead 5.3 lbs.
- 8—Compo. Shingles 11.5 sq. ft.
- 9—Gypsum Plaster 74.7 lbs.



IN 1932
WOULD
BUY

THEN

- 1—dollars \$4.00
- 2—No. 1 Yellow Pine 111 ft.
- 3—Brick 333
- 4—Portland Cement 760 lbs.
- 5—Hydrated Lime 571 lbs.
- 6—Building Sand 3.2 cu. yd.
- 7—White Lead 30 lbs.
- 8—Compo. Shingles 66 sq. ft.
- 9—Gypsum Plaster 500 lbs.



IN 1937
WILL
BUY

NOW

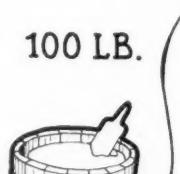
- 1—dollars \$12.75
- 2—No. 1 Yellow Pine 283 ft.
- 3—Brick 728
- 4—Portland Cement 2394 lbs.
- 5—Hydrated Lime 1992 lbs.
- 6—Building Sand 6.5 cu. yd.
- 7—White Lead 106 lbs.
- 8—Compo. Shingles 231 sq. ft.
- 9—Gypsum Plaster 1500 lbs.



IN 1932
WOULD
BUY

THEN

- 1—dollars \$18.40
- 2—No. 1 Yellow Pine 511 ft.
- 3—Brick 1533
- 4—Portland Cement 3496 lbs. (9.2 bbl.)
- 5—Hydrated Lime 2627 lbs.
- 6—Building Sand 15 cu. yd.
- 7—White Lead 138 lbs.
- 8—Compo. Shingles 306 sq. ft.
- 9—Gypsum Plaster 2300 lbs.



IN 1937
WILL
BUY

NOW

- 1—dollars \$33.70
- 2—No. 1 Yellow Pine 748 ft.
- 3—Brick 1925
- 4—Portland Cement 6403 lbs. (16.85 bbl.)
- 5—Hydrated Lime 5265 lbs.
- 6—Building Sand 17.3 cu. yd.
- 7—White Lead 280 lbs.
- 8—Compo. Shingles 613 sq. ft.
- 9—Gypsum Plaster 3964 lbs.

"How Much"— Installed?

ICAN'T afford to build a house today—the price of putty is too high."

Sounds funny, doesn't it? Yet this remark, attributed to a recent prospective home buyer, illustrates very well some of the current loose thinking in regard to home building costs.

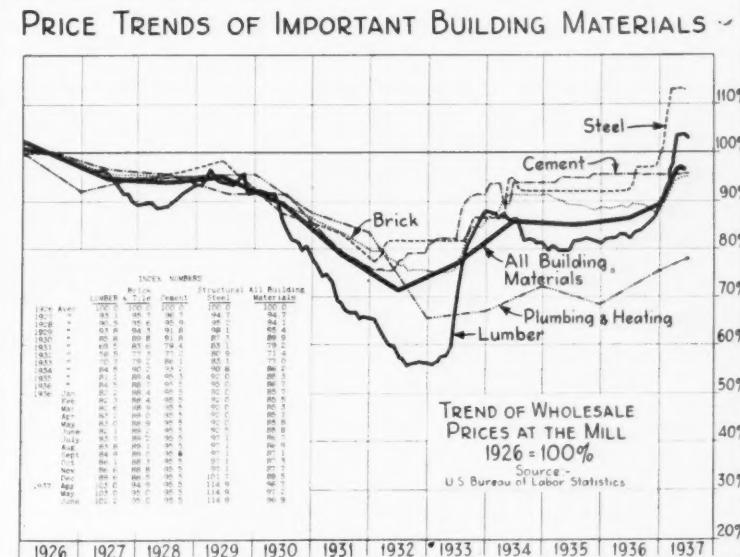
Here is the all-important fact that builders and lumber dealers must make clear to the general public: *it's not the price of putty or nails that should concern the average buyer; it is the over-all cost of the complete house and lot, including the financing.* And the corollary to this is that the price of nails and putty, of cement and lumber, is not as important in determining the final cost to the home owner as the skill, ingenuity and professional ability of the builder, and his fellow building industry men.

Builders are continually putting more equipment and better equipment, new devices, new aids to comfort and livability, improved construction practices, and materials into their homes. They are doing this today and have been doing it over the past decade without a comparable increase in the price of the finished house. This is clearly shown when the comparisons are made with the houses built in the 1926-29 era.

A factor that has done much to confuse the public thinking on building costs and prices is the incompleteness of most of the current indices of building costs. These are usually heavily weighted with a few basic commodities. Of course these commodities are important, but an index which is based on these alone fails to show such important factors as the price of home equipment, such as oil burners, refrigerators and electrical devices. Such a material index also fails to show the relative operating efficiency of the builder. And this item alone outweighs all others.

It would be possible to show that many of the items that go into the construction of an automobile have advanced materially in cost. Yet this does not necessarily mean that the sale price of an automobile will increase the same amount. The reason is that automobile manufacturers are constantly adopting technical improvements, perfecting their methods. This same statement holds true for the builders of homes. When any particular unit of building cost gets out of line, they automatically find ways to correct it. They may adopt a different method of construction involving a different product. Or they may rearrange their plan to require less of that material. Or they may develop an improved installation or assembly method that will compensate for the increased cost.

In this issue are countless instances of the type of improvements that have taken place and that are largely





CATERPILLAR tractor with rotary scoop reduces excavation, grading and back-filling costs.



HIGH SPEED, light weight mixer can be inexpensively moved from job to job. Used by Whitson Improvement Corp., to cut costs.



THEODORE M. LAY, prominent builder, analyzes and describes current building practices that create high 1937 values.

OPERATIVE BUILDERS of the country are building homes today that represent a 25 to 40 percent increase in value over those built in the 1926-1929 era.

This is a conservative figure, and there are numerous instances where the home built today in a planned residential community represents an even greater advance in value. The operative builder of today is doing a far different and far higher type of work than he did a decade ago. He is employing an architect and producing better designs; he is putting his houses in planned communities, on larger lots with high type roads and utilities.

Most important of all, the operative builders who are now most active are men who have had a sound background of experience in this field. In the past decade they have learned a great deal. During the depression they were forced to study their business methods more carefully. They now spend more time in planning, and as a result the houses are more compact, more efficient. They have been quick to adopt new materials—many of them prefabricated in factories which reduce time and labor spent on the job. They are using more power equipment of all kinds.

Keen competitive conditions have resulted in the ac-

Scientific Methods

**40% More Value in 1937 Homes
Built by Operative Builders
Due to Better Planning, Modern Materials, Power Equipment, Greater Job Efficiency.**

ceptance today of lower profits by the builder. In most cases the acreage cost of land is much less than in 1926 or '29. And the operative builder of today is figuring only one profit—a reasonable one based on the complete job. A study of this important subject indicates that this one profit in many cases is figured as low as 8 percent—a very large reduction from the practice of the previous decade.

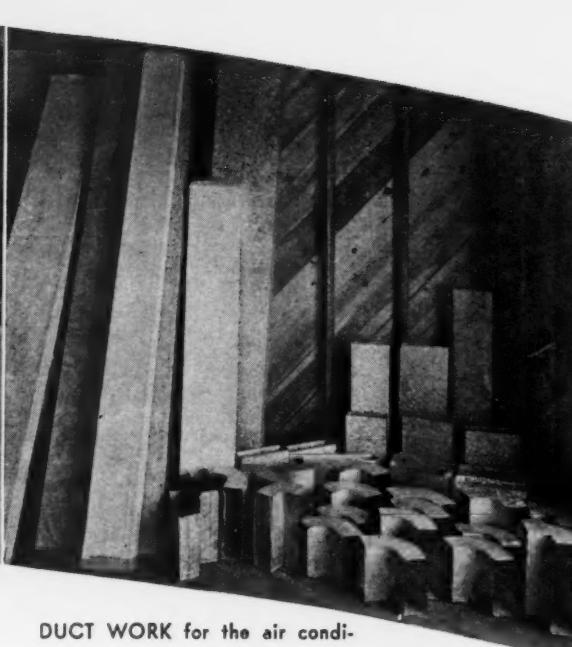
To illustrate the construction and planning methods that have resulted in such higher values in the 1937 home, *American Builder* has made a thorough analysis of the operations of a prominent Long Island builder, Mr. Theodore M. Lay, whose firm, the Whitson Improvement Corporation, is building an attractive home community in Monfort Hills at Port Washington, L. I. The accompanying construction and equipment photographs were taken on this job.

A thoughtful, well educated, experienced builder, Mr. Lay believes that the most important advance in construction progress is the creation of a complete community with each house properly planned for its surroundings, in which the operation is a well-rounded whole, including landscaping and trees.

"Ten years ago in our territory, a community was



ELECTRIC pipe-cutting machine greatly reduces plumbing costs in the Monfort Hills homes of Theodore M. Lay's organization.



DUCT WORK for the air conditioning system is prefabricated in a local plant, accomplishing a good saving in installation costs.



LUMBER and framing is scientifically detailed and pre-cut on this power saw set up on the job.

Reduce Home Costs

More Gray Matter in the Office, Less Brawn on the Job Is Present Policy of Prominent Builders. Build Better Homes.

By JOSEPH B. MASON



THE Whitson-built houses rise from their foundations in record-breaking time because of speed and efficiency of builder.

created by a land developer who retailed individual plots to contractors," Mr. Lay says. "Today a well financed operative builder does the entire job of buying the land, installing the improvements, building and selling the home—eliminating several profits on land and intermediate operations."

Lay believes a further economy is achieved by owning as much of his own equipment as possible and doing all the operations with his own men. "A sub must either make a profit or take it out of the work," he pointed out. "We have our own skilled workmen and do all our own carpentry, painting, excavating and masonry work."

The major Whitson Company equipment includes:

1. A DeWalt power saw, which is moved from house to house.
2. A T. L. Smith one-bag, $\frac{1}{4}$ yard, trailer type mixer that is easily moved from house to house and can be lowered into a basement when necessary.
3. A small Caterpillar tractor with rotary scoop, which does the bulk of the excavation, grading and back filling.
4. A Ford, $1\frac{1}{2}$ cu. yd., hydraulic dump truck.
5. A Toledo electric pipe cutting and threading machine.

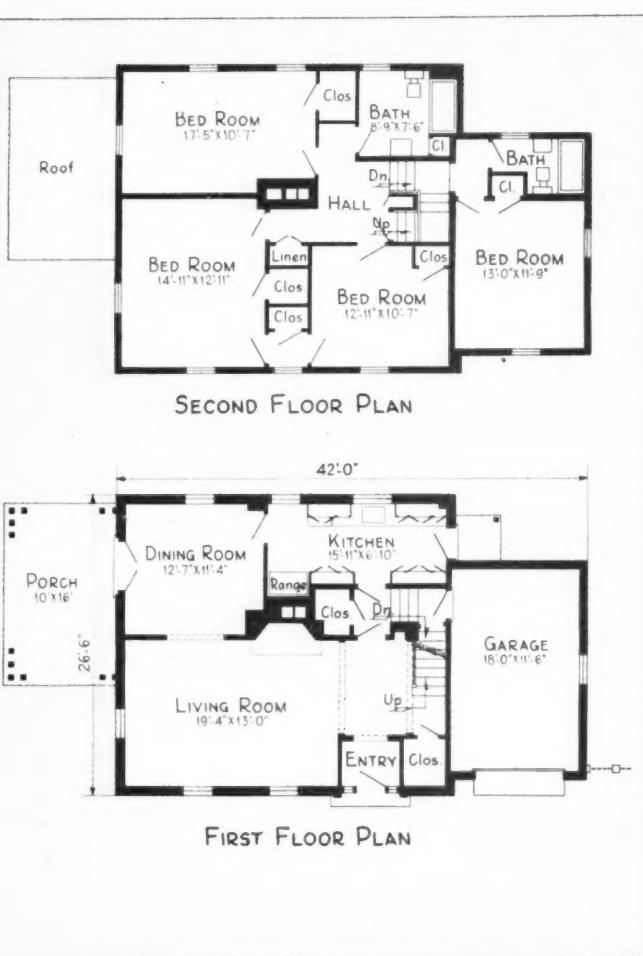
Because the building of every house is carefully planned and scheduled, the equipment is kept constantly at work and achieves a high saving in cost. The power saw performs an important function in cutting of all framing and lumber from carefully detailed plans. This leads to the important feature of *improved planning*, which Lay believes is one of the most important items in the reduction of cost over the methods of 1926.

"Most large builders today can afford to employ highly competent construction foremen who lay out the work progressively and efficiently, similar to the assembly-line planning of an automobile manufacturer," he says. "As soon as the plasterers are finished with one house, another is ready for plastering, and the lathers, who precede them, pass on to still another house. The work is progressively organized so that foundations, masonry, carpentry, electrical work, floor laying, roofing, painting and landscaping follow each other without loss of time or wasted effort. There is no lost time and this saving is passed on to the home buyer."

On the wall of the Whitson construction office is a large progress chart in which the building operations are indicated and a definite time set for each operation. When a contract has been signed the builder gives a date when



Cost \$4,500 Less Than 1926



AIR CONDITIONED, insulated, intelligently planned and finished, with a host of modern materials and items of equipment unheard of in 1926, this house—if it could have been built—would have cost \$4500 more in 1926 than it did this year. It was designed by Architects Kimball and Husted, and built by Whitson Improvement Corporation in its successful Monfort Hills Development.

it will be ready for occupancy. The foreman then fills in his time chart, working back from the completion date established. This means that every operation must be done strictly on schedule.

An experienced foreman lays out the work and estimates the number of joists, rafters and dimension pieces required. These are cut on the power saw by one carpenter who specializes in this work. An electric pipe cutting and threading machine is also used, and here again the foreman lays out the job so that the pipe is cut to exact size and will be installed without cutting or alteration of the framing. Similarly, the duct work for air conditioning is fully prefabricated in a nearby sheet metal plant and is installed with great efficiency and speed. The location of ducts and pipes is carefully detailed in advance to eliminate any unnecessary cutting or waste motion.

"This advance planning and precutting is one reason why the modern house rises so quickly from foundation walls to complete enclosure with what seems incredible speed to the layman," says Lay.

"It causes some of the old-timers to skeptically shake their heads and say 'they don't take the time to build houses the way they used to.' The fact is that today we use more gray matter on the drafting board and at the construction office and less brawn on the job," he declares.

Another economy in construction of the home today that was not prevalent in 1926 is the use of stock steel and wood concrete forms. Lay uses and reuses stock panel



SCIENTIFIC methods make this attractive Colonial home in Monfort Hills possible today at a cost \$2500 less than a similar home could have been built in 1926. Study of the floor plan below will show how the intelligent builder of today, employing a capable architect, is able to get the most out of enclosed space. This is an immeasurably better home than possible in 1926—and at a lower cost.

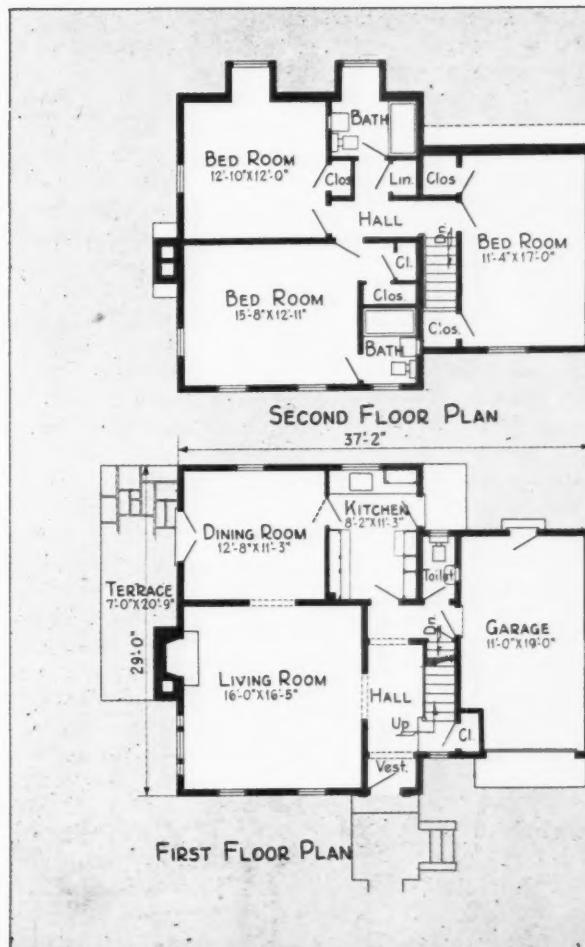
sections built of 1 x 6 T. and G. boards. He uses a two-wheel buggy in delivering concrete from the mixer to the forms and states that this use of buggies is four times as efficient as the former wheelbarrow method.

The house plans used by Whitson Company and other prominent builders also represent remarkable progress in home economy. Architects are employed who have become specialists in residential work and who adopt simple, rectangular floor plans that give the most effective use of space. At the same time, exteriors as well as interiors are in better taste because of the use of properly trained architects who know good design.

Outstanding in the reasons for the high value of the modern home is the perfection of high quality stock materials and equipment that are built in factories and are installed on the job at a minimum of cost. A classic example pointed out by Lay are the kitchen cabinets which formerly were built on the job by the carpenter or done in a small local mill. Today the operative builder buys highly efficient steel or wood factory-built cabinets which come to the job complete with glossy, hard-finished surfaces. A host of other products have had a similar development. More windows today of either wood or metal are factory-built and come ready for quick installation. The heating equipment comes as a single, well integrated, efficient unit, vastly better and lower in cost than the assortment of parts that it was necessary to purchase a decade ago. Because of the

(Continued to page 166)

Cost \$2,500 Less Than 1926



TEAMWORK Brings Better Home Service



ROCCO PERFETTO, New Haven guild contractor, explains a detail of construction to a prospective owner.

A NEW HAVEN, CONN., contractor who has been busy building houses to order this year and last, was asked the secret of his success and enlarged bank account.

"It isn't *my* secret," he replied. "It's the result of the right kind of co-operation among local building factors—the lumber dealers, contractors, architects, realtors and financing agencies."

"Didn't you co-operate the same way in the last building era?" was the next question asked.

"No, but then and during the depression we learned a good many lessons about the need for co-operation. For one thing, we discovered that the public wanted to buy houses as units or complete packages. We discovered that many families bought houses unsuited to them, that they paid excessive financing costs and assumed mortgages too high for comfort or payment. We found out that the public could be interested in good design, sound construction, and long-life materials."

"And it didn't take much figuring to show that there was too much duplication among building factors in seeing and selling. Of course we've also all known the profit losses in cut-throat bidding."

"If," continued the contractor, "you want to find out how a bunch of us work together on selling, architecture, materials, construction, real estate and financing, go down to our co-operative headquarters which are in the display rooms of the Lampson Lumber Company."

Before following this contractor's suggestion we visited a number of other co-operating contractors to see what they thought of the plan and if they were getting results and profit from the movement.

Mario Quarrello, who had a major remodeling job well under way, did no sparring when we asked him how he felt about this co-operative plan.

"Why shouldn't I like it?" he said. "It dumps in my

Unified Plan Increases Efficiency, Makes Home Buying and Improvement Easier.

By C. L. QUISNO

lap many jobs I couldn't get otherwise. I've been busy all year. With the guild salesmen doing the selling, I don't have to worry about that or use up time which should be put into building."

J. Louis Reed, who was putting the finishing touches on an attractive Dutch Colonial, said, "This plan saves me a lot of unprofitable work, such as figuring, estimating, and taking off lists. In the old days I had to do this work without charging it in on the bill unless I wanted to risk losing the job."

"I've made a profit on every guild job I've done," said Mr. Millard Matthias of J. N. Leonard Co., whom we located on another new house job down the street. "And that's the way every contractor who does good work should operate."

Our fourth call, on Mr. Anderson of Anderson and Swanson, brought this comment: "I used to think that house remodeling and repair work wasn't profitable when I had to sell it and compete with all kinds of figures; but this year under the new plan, with the guild sales-



F. L. GRANT, guild salesman, is seen in the display room at headquarters with customers interested in a new house.

men doing the selling and figuring jobs on the definite basis of the Estimating Guide, I have made money on every job. Another advantage I find is that working with a group with high standards helps to build up my reputation as a quality builder."

Following these encouraging interviews we drove to the headquarters of The New Haven Housing Guild which are in the display rooms of the Lampson Lumber Company, Inc. We talked to Mr. E. Matthias who acts as sales manager for the group.

"Why did you and your co-operators adopt this plan?" was the first question asked.

"We got tired of waiting for customers to come to us and also we thought the prospective home owner would welcome our handling the many details of building which he didn't understand," replied Mr. Matthias.

"Has the plan helped develop any business?" was the next natural question.

"Since shortly after the guild went into operation our sales for remodeling, repairs and new houses have been increasing each succeeding month. This year we will sell close to fifty new houses as well as increasing our volume on remodeling and repairs," was the reply.

"Didn't business drop off during the summer slump which many dealers and contractors have been complaining about this year?"

"As I told you before, our business has been increasing month by month," Matthias shot back.

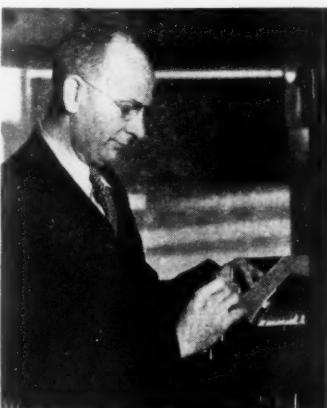
How the Plan Works

The New Haven Housing Guild was started in 1936. Contractors, realtors, financing agencies and public utilities were invited to join the guild. The plan of operation was fully explained to them. The idea of "package selling," or rather of selling and delivering a house or home improvement in one unit, instead of in many confusing units such as blueprints, financing papers, raw materials, specifications and a multitude of contractors, was emphasized because of its great service to the public.

Newspaper advertising on both new construction and remodeling began to bring in leads for the salesmen to work on. The salesmen, equipped with complete sales kits, began to make sales under the new plan.

As the co-operating contractors came to recognize that there was an efficient sales organization working continuously to sell their services, they began to turn in names of prospects which they had uncovered for the guild salesmen to sell.

Figuring and estimating on the average run-of-mine job, where no demolition is involved or special problems encountered, is done mostly by the salesmen. This work is speeded up and simplified by the Estimating Guide, which short cuts the process of quoting the consumer a complete price. All jobs are figured to allow an adequate profit.



CARD index enables the sales manager, E. Matthias, to check prospects and calls. Above is seen the salesman's kit, used in efficient selling.

More than a model home...

an utterly new standard of construction

Featuring the JOHNS-MANVILLE principle of "TRIPLE INSULATION"

Visit
Connecticut's first
"TRIPLE-INSULATED"
MODEL HOUSE
APPROVED STRUCTURALLY BY JOHNS-MANVILLE
At 480 Laurel Road
New Haven
ARCHITECT:
HARRISON E. BALDWIN



The last word in construction; it is
protected against FIRE, WEATHER, WEAR

YOUR new home must be handsome, charming—but
you want more than good looks. You want the last
word in comfort, the newest in economy and freedom from
maintenance, the latest in dependability and SAFETY.

Visit the new "Triple Insulated" model home pictured
here—see how effectively we have protected it
against fire, weather and wear by the use of Johns-
Manville Building Materials.

The roof of this home is fireproof, permanent, free
from yearly upkeep. The exterior walls are also fire-
proof. They will not rot and are termite-proof.

The rooms of this house will be up to 15° cooler in
hottest weather. In winter every room will be warm and
cosy; easy to heat. Fuel bills will be reduced as much
as 30%.

There will be no expense repair bills for cracked and
falling plaster, because walls and ceilings are steel re-
inforced.

Visit this "20-year-ahead" house today. And when you do, be sure to see the
interesting demonstration which "X-rays" its structure before your very eyes.

BUILT AND OWNED BY

RAY RIDGE REALTY CO.
1210 Forest Road

LAST WEEK
Here are some of the de-
tails: Large living room, din-
ing room and reception hall.
Modern kitchen, 3 bedrooms,
dressing room and cedar closet.
Heated attached garage. Air
conditioned rooms. Con-
venient to schools, churches,
stores and bus line.
Directions for reaching
house: Mountain Street to
Vista Terrace to Marvelwood
Drive to Laurel Road.
Decorated and furnished
by
BULLARD'S
Architect
HARRISON BALDWIN
Painted by
Robert Kannegiesser
Open Daily 2 to 8 P. M.

NEWSPAPER ADVERTISEMENTS similar to this are one of the
main sources of leads in the New Haven housing drive.

for all building factors who are involved. The salesmen made some sales in homes; others were made in the display rooms.

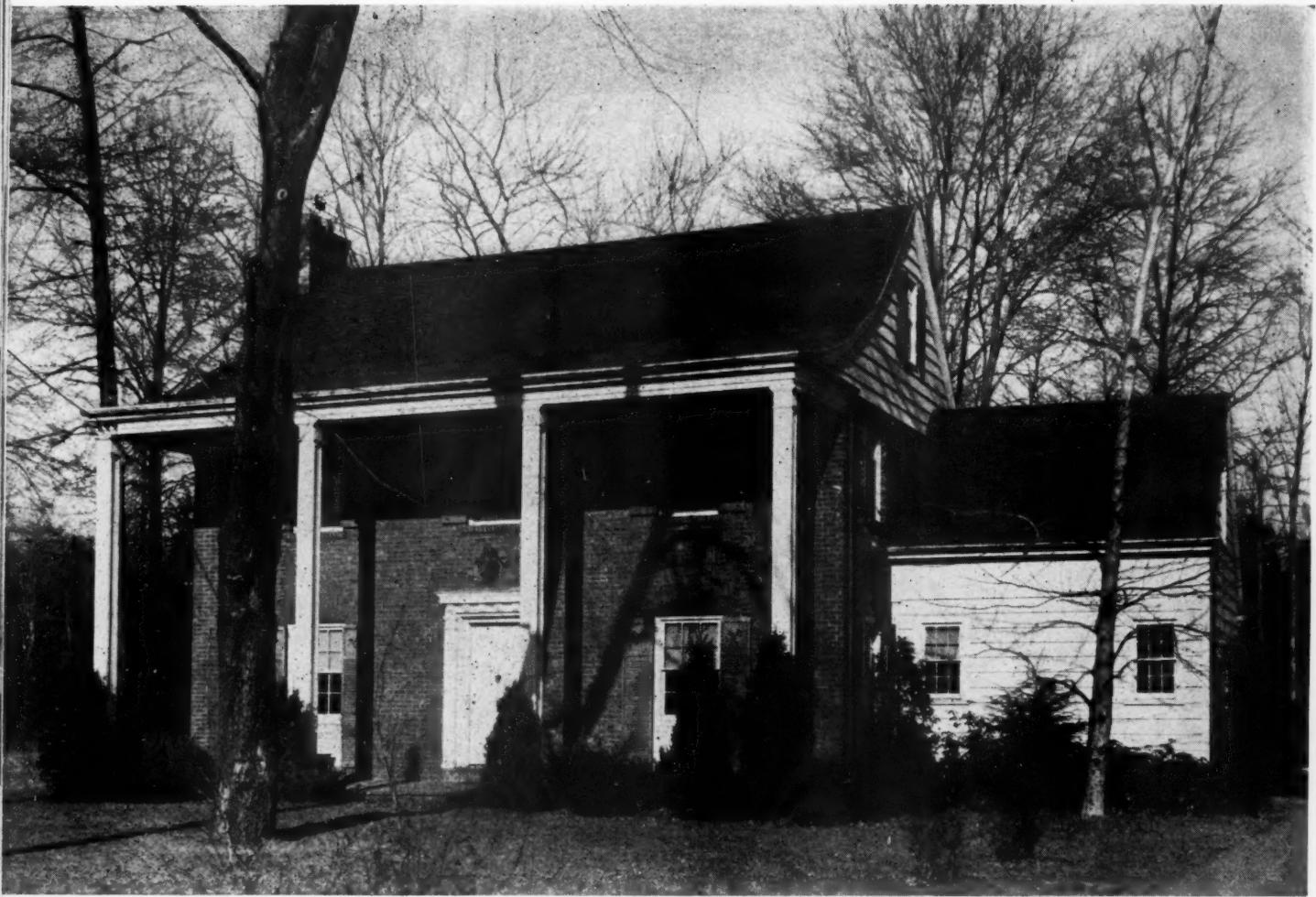
When a job is sold, one of the co-operating contractors is called in. The contractor then signs the Agreement, which becomes the contract between the contractor and the consumer. The order which the customer signs does not become a contract until it is accepted by a contractor member of the guild.

In the allocation of work, to assure that every contractor member gets his rightful share of the jobs sold, the following principles apply:

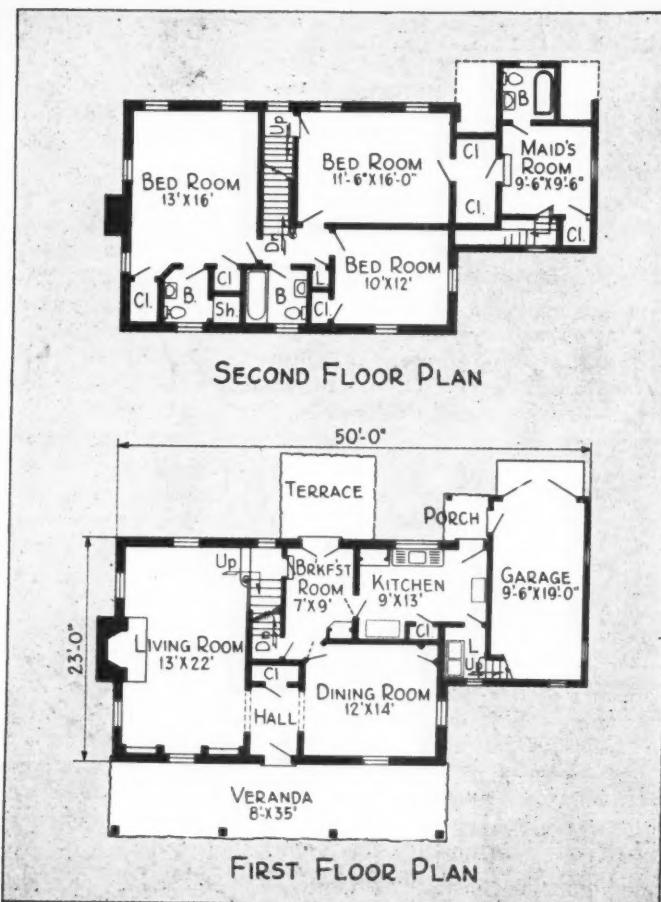
Every prospect who is contacted by a guild salesman is requested to give the name of his preferred contractor. If such contractor is a member of the local guild, the job automatically goes to him. If the prospect has no preference, the work is given to the logical contractor member in that territory. If he happens to be a specialist on some particular kind of work which corresponds with the order, he receives the first call. In order to give the consumer prompt service and avoid unnecessary delay, if two or more contractors are equally eligible, the one who is least busy receives first consideration.

Aside from the considerations mentioned, the work is allocated on a rotation basis and the guild sales manager checks his sales ledger frequently to make sure that jobs sold by the salesmen are being distributed among contractor members with absolute impartiality.

(Continued to page 148)



WHITE COLUMNS and a broad porch lend dignity and charm to this Cheelcroft house. Architect, Wallace Dunlop, Ridgewood, N.J.



These Houses Are 50% Better Values Than 1926 Says Harold W. Cheel

3 BATHS, IMPROVED PLAN, MODERN EQUIPMENT

Cost Key is 2.162—154—924—40—27—21

HAROLD W. CHEEL is a builder with a reputation for reliability and fair dealing. He is one of the few builders we know of who elects to live in his own development—an attractive residential community which he calls Cheelcroft, located at Hohokus, N.J. Cheel was building houses in 1926, he built houses during the depression, and he is still building fine, livable, well equipped homes. It is his belief that the two houses illustrated above, selected from a number he built this year, represent easily a 50 per cent greater value than comparable homes built in 1926.

The tremendous strides made in home building since 1926 are nowhere better illustrated than in the Cheelcroft houses. Air conditioning, insulation, modern kitchens and baths, remarkably comfortable and efficient floor plans are features of the



SIX ROOMS, three baths are included in this smart Regency style home, featuring many notable improvements without corresponding increase in cost. Adams and Prentice of New York City were the architects.

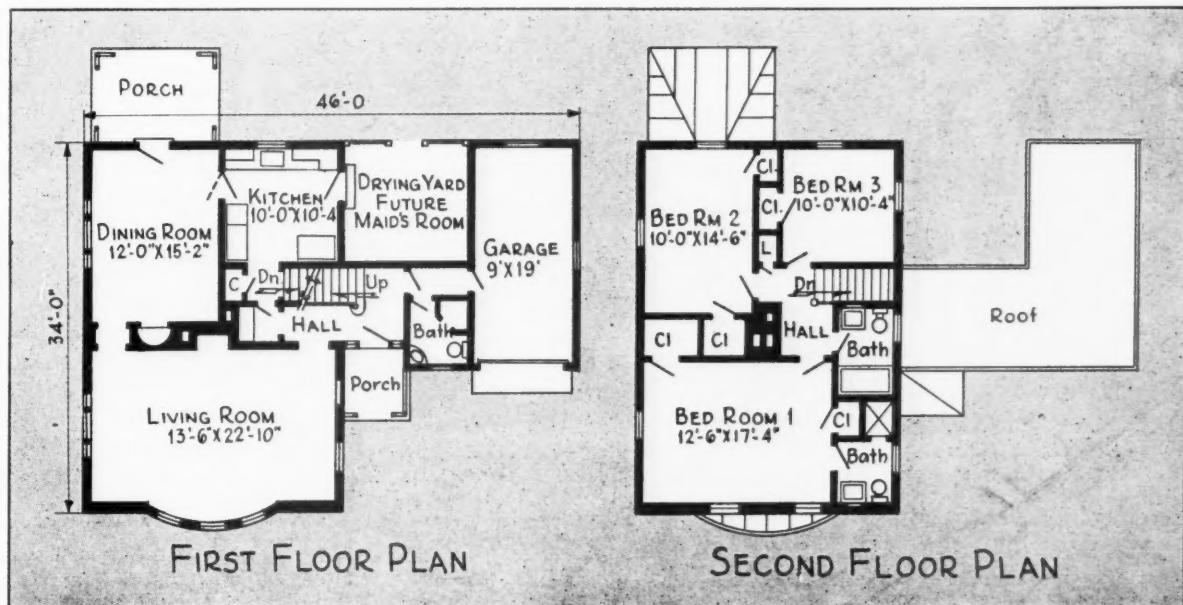
1937 homes. The house of today is so vastly improved it can hardly be compared with 1926. Cheel attributes the high value of his 1937 homes to greater efficiency in construction—use of power equipment, improvements and standardization of equipment and materials.

Considering the two houses above, the white columns and broad porch of the house at left give dignity and appearance of size. There are three bathrooms, four

good bedrooms, a laundry, cheerful breakfast room.

The modern Regency house at the right is an excellent illustration of today's value. There are three full baths, one of which opens off the master bedroom—an indication of the trend toward more bathrooms and less cubage. The floor arrangement is unusual, with a fine, cheerful living room and a convenient side entrance with connection to the garage.

MORE
HOUSE FOR
THE MONEY
TODAY



Industry Leaders Endorse "Truth About Home Building Costs" Program

American Builder's Plan to Demonstrate Comparative High Values of Today Is Being Enthusiastically Received

MANY letters and much cost data have been pouring into the editorial department of *AMERICAN BUILDER* since the inauguration of this campaign to counteract damaging high cost publicity and prove that "More House for the Money" is available today as compared to the 1926-29 period. Some of these letters have provided the numerous examples of comparative costs which have been used in this issue, for which the editors of *AMERICAN BUILDER* express their appreciation. Others contain endorsements of the program. A few of them are presented below.

Prejudiced Propaganda

Xenia, O.

To the Editor:

You are certainly to be commended for promoting a nation-wide movement to correct false price-thinking, with reference to today's home building costs.

This has been an especially aggravating issue in Ohio in the past few weeks. The press has been full of misleading editorials and feature stories on the theme of the "exorbitant cost of materials curtailing construction activity."

One group of papers in Ohio has been especially prejudiced and aggressive with this propaganda.

At a recent meeting of metropolitan secretaries of our Association at Cleveland, this was the chief topic of discussion. I am happy to say that we have aroused the Ohio dealers to the importance of organized resistance to these prejudiced and inaccurate articles, and through our clipping bureaus and the assistance of dealers in sending us clippings of all such material that appears in their papers, we have been successful in curbing this trend, and in getting some of our own material into the press.



I know of no industry which is in greater need of persistent "public relations" service in overcoming the stigma of prejudice and misunderstanding, which is a far costlier burden to our industry than the average dealer or manufacturer appreciates.

I am delighted to see that the *American Builder* is concentrating upon the importance of this need.

THE OHIO ASSOCIATION OF RETAIL LUMBER DEALERS,
By Findley M. Torrence, Secy.

Hardware 22% Less

New Britain, Conn.

To the Editor:

We believe the plan that you are inaugurating to counteract the damaging barrage of publicity regarding the high cost of building will prove most helpful to the hardware building industry.

We are attaching herewith, photographs of two classifications of special handles. One of these handles, due to the simplicity of design and construction, improved manufacturing methods and increased volume make it possible for us to furnish this superior handle at a price approximately 22% below that of the comparatively representative handle (photograph attached) of a dozen years ago.

These two photographs distinctively demonstrate the extensive improvement in building products and equipment since 1926 and 1929 that make it possible to offer improved and lower values today in builders' hardware.

P. & F. CORBIN Division,
By A. J. Sataline, Adv. Mgr.

1937 Boilers 40% Less

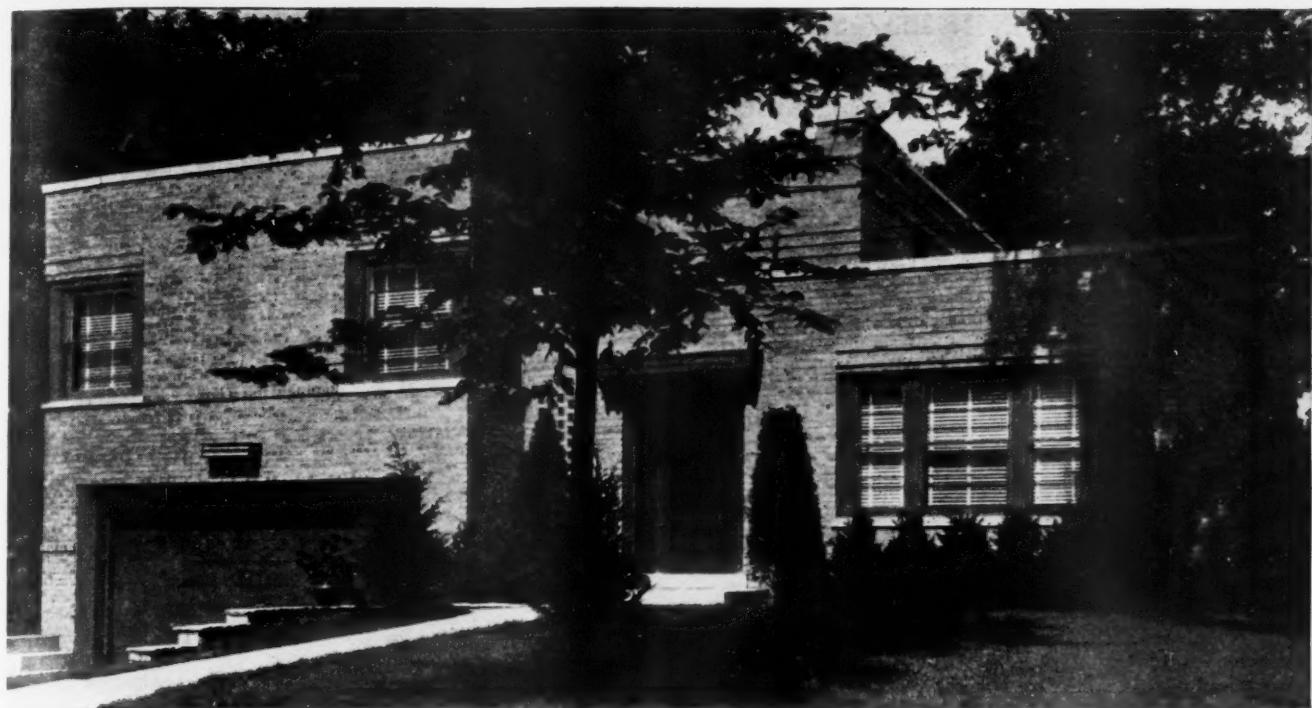
Johnstown, Pa.

To the Editor:

We are enclosing photographs of our National Boiler which was very popular in 1926 together with a glossy print of the National Heat Extractor Boiler which was introduced to the market only about six weeks ago.

The 1926 boiler was equipped with only the bare essentials; no trimmings whatsoever were included in the published prices of water boilers. Even damper regulators were sold as "extra" on steam boilers. Insulation was extra and the boiler was practically the same as it was in 1906—no effort had been made to improve

(Continued to page 150)



Modern Design That Is Beyond Comparison

Practical Planning Technique and Improved Materials Have Created New Standards of Home Comfort

See Next Two Pages for Plans and Details

TO COMPARE today's modern style homes of good design with those of ten years ago on the basis of appearance or livability is difficult. Many recent developments in materials, equipment and space economy had not yet materialized; modern house styling was then in a very crude stage. But advances along these lines now make it possible for home builders to create a new conception of comfort and convenience even in the moderately priced home.

The house shown on this page with plans and details on the following two pages is typical of this better type of modern home. It was designed by Architect Elmer William Marx of Chicago and features pleasing modern style; staggered floor levels for less stair-climbing between the important rooms; efficient U-type kitchen plan with breakfast space; flat roofs for minimum of waste cubage and decks for outdoor living; automatic gas-fired winter air conditioning, combined with effective fuel-saving insulation.

Commenting on today's houses, Mr. Marx states, "Numerous technical improvements in equipment and materials combined with better design have given the architect new tools with which to plan for greater comfort and value."

Students of good home planning will find many unusual ideas in the plans and specifications of this carefully designed house.

ENTRANCE DETAIL at right shows a refined modern treatment. Hardware is in harmony with style. Drawings on next page show the flush entrance light and house number in canopy.



MODERN HOME IN 1937 STYLE
Designed by Elmer William Marx, Chicago
Architect and Built in Edgebrook, Chicago

Exteriors Shown on Preceding Page

"HIGH VALUE" 1937 SPECIFICATIONS

MASONRY

Remove black soil entire width of lot from public sidewalk to a distance of one hundred feet back from sidewalk.

Excavate to depths as shown on drawings. Backfill and rough-grade lot, placing black dirt on top. Haul away surplus ground.

Place all concrete footings, foundation walls, areas, floors and concrete slabs. Concrete footings to be carried down to solid bearing. Place chicken-wire in the concrete auto drive. Place the crushed stone auto drive from street to sidewalk. Plaster both sides of foundation wall. Slabs 1:2:4 mix; plastering 1:2 mix; other concrete 1:3:5 mix. Floors, drives and walks on 3" cinders.

Walls of superstructure are of solid masonry, exposed walls to be of new common brick. The back-up brick and all interior walls are to be of "used" common. Brick to be bonded-in in accordance to the city ordinance. Mortar to be cement-lime using torpedo sand with $\frac{3}{8}$ " struck joints. Leave dry joints on inside to nail furring strips.

Back hearth and firebox walls of the fireplace are to be of

RIGHT: Kitchen is laid out in efficient U-type plan with good light, work space and storage; breakfast space is provided. Below and on opposite page are details, plans and elevations of this carefully planned modern home. Interesting roof vent detail (below) shows how dead air space over ceilings is ventilated. Recreation room with adjoining roof terraces is an unusual and pleasant feature.

fire brick laid in fire clay. Vitrolite facing by others. Place stone front hearth. Furnish and place the fireclay flue linings set in fire clay mortar.

Furnish and set all structural steel, lintels, cleanout doors, plate anchors, ash dump, Colonial damper, wrought iron interior stair railing, exterior wrought iron, reinforcing bars, etc.

Furnish and set all stone. Stone to be Indiana Limestone.

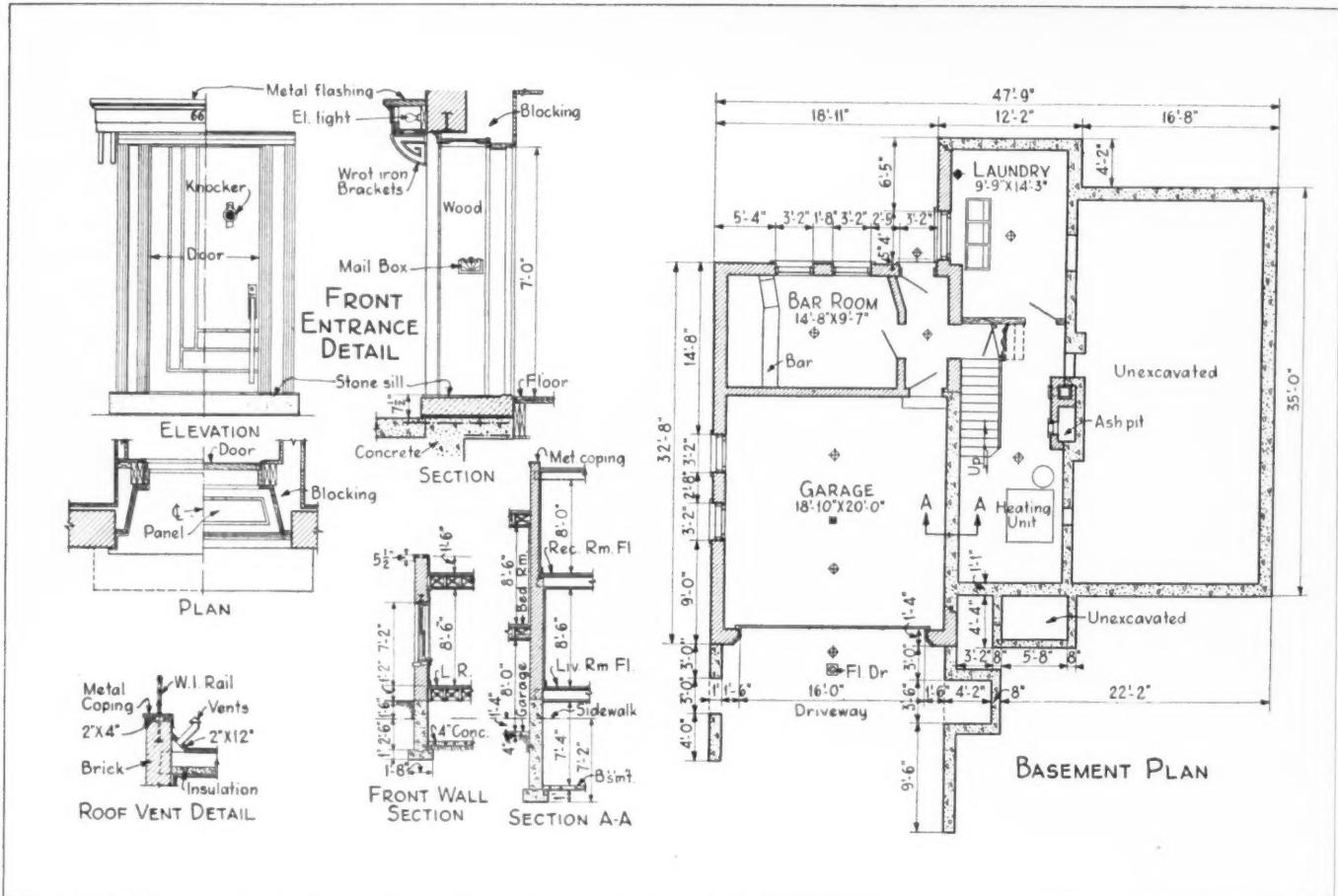
Clean down brick work upon completion.

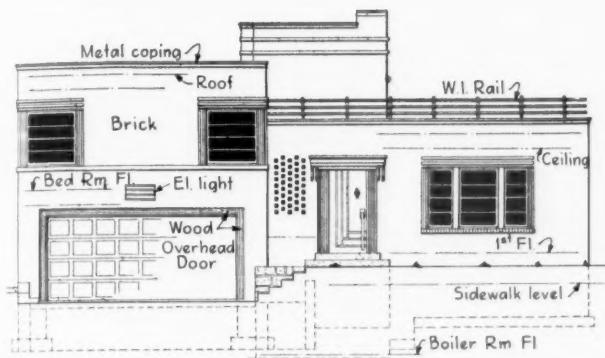
Furnish and place one No. 15 Majestic Underground Garbage Receiver complete with 15 gallon corrugated G.I. can.

CARPENTRY

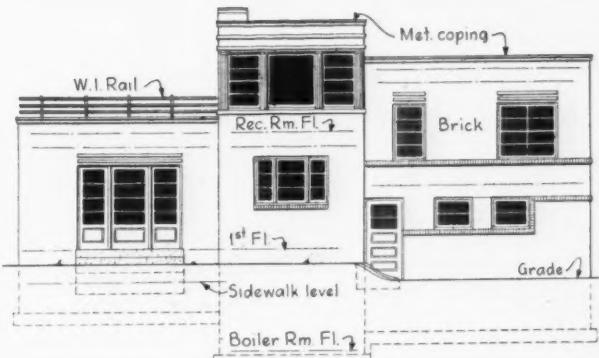
Structural lumber to be No. 1 Longleaf Yellow Pine. Studs to be 12" o.c. where joists are 12" o.c., otherwise 16" o.c.

(Continued to page 178)

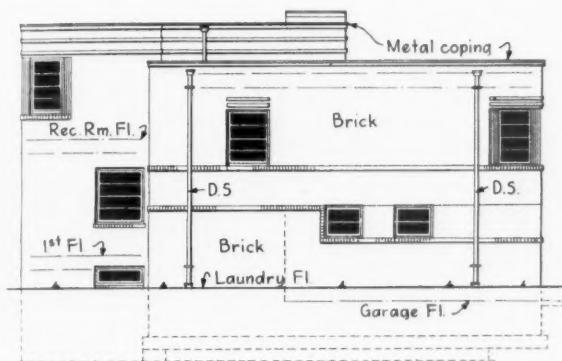




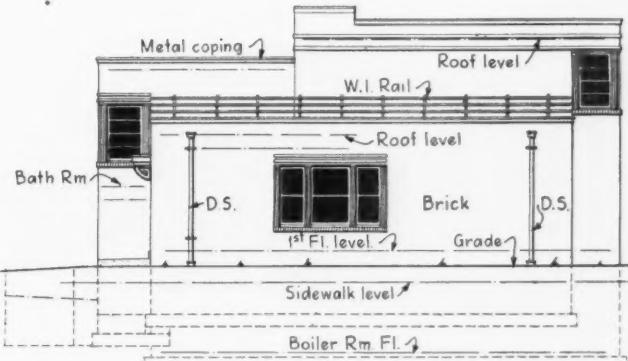
EAST ELEVATION



WEST ELEVATION

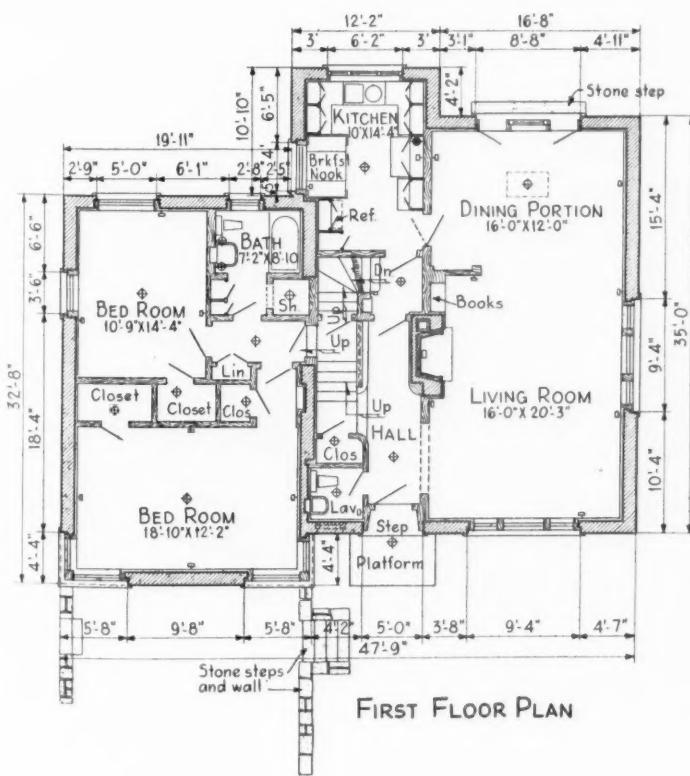


SOUTH ELEVATION

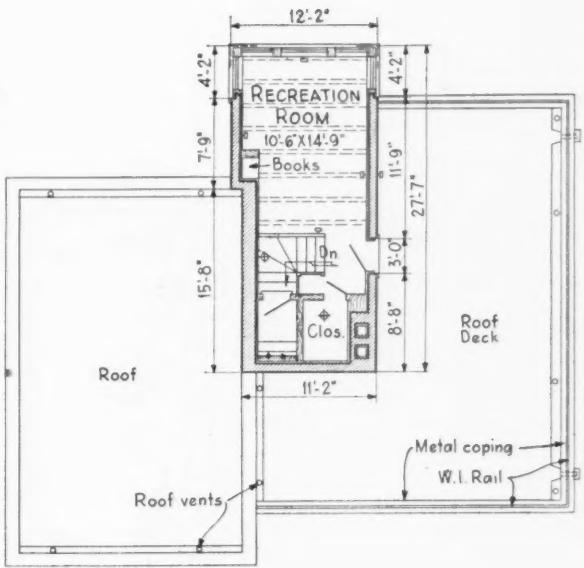


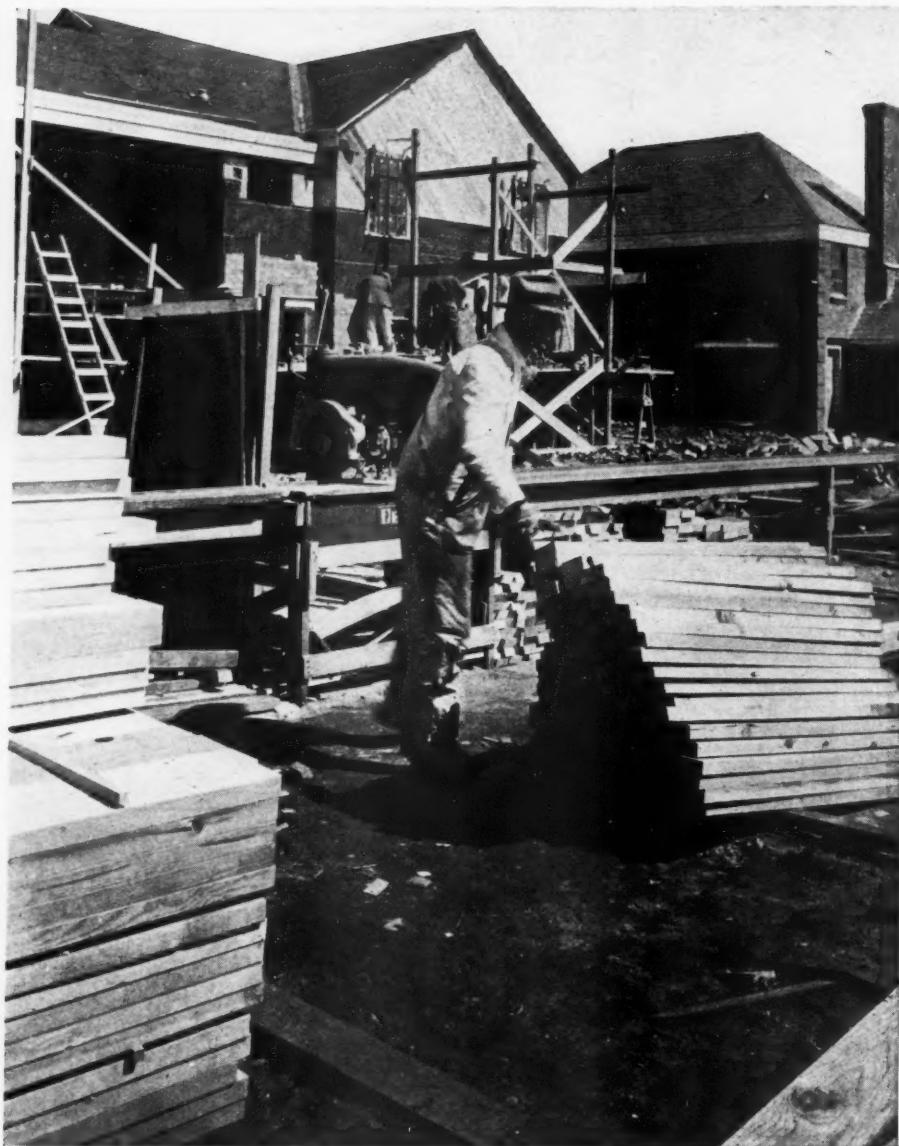
NORTH ELEVATION

0 5 10 15 20 25
SCALE IN FEET



FIRST FLOOR PLAN

RECREATION ROOM AND
ROOF PLAN



POWER SAW enables Levitt & Sons, prominent builders, to give more house for the money. Lumber is carefully scheduled and cut in advance. A pile of studding, cut in a fraction of the time required by hand sawing, is seen in the foreground.

FEW people identified with what is known as "the general public" realize the changes and improvements that have taken place in the construction operations involved in home building. Yet, to say they have not taken place is to say that black is white.

The 1937 builder of homes operates much more efficiently than the 1926 builder. For one thing, he knows more. During the depression he had an opportunity to study new materials, methods and equipment. During the depression the makers of construction equipment, power saws and other labor- and time-saving devices also were improving their products and producing a better machine at a lower cost. Without exception, the construction machine of today is a faster, more powerful, money-saving device than was produced in 1926.

An analysis of building operations from coast to coast necessarily shows wide variations in methods and in the types of the equipment used. One general observation that appears to hold for urban construction, at least, is that there is a trend toward larger developments where the advantages of mass production using all the latest types of equipment are on the increase.

The smaller operators, faced with competition from big

Improved Equipment Brings Lower Home Costs

Builders Can Pay Higher Wages and Still Give More House for the Money Because Productivity Is Greater. Scientific Planning for Use of Modern Machinery Speeds Work, Reduces Overhead, Does Better Job.

developments, have been forced to exercise ingenuity and skill, and have also adopted modern equipment that was seldom used in 1926 in operations of this type.

More extensive use of modern construction equipment is linked hand in hand with more intensive *job planning*. The two are closely related, for to accomplish maximum saving and economy, the equipment must be used as part of a planned construction program.

This point is most conclusively illustrated by the use

Lower Home Costs Result From:

Improved Mixers	Power Drills
Stock Concrete Forms	Floor Sanders
Concrete Buggies	Stucco Spray Machines
Excavators & Tractors	Levels & Transits
More Efficient Trucks	Wallboard Tools
Electric Power Saws	Improved Scaffolds & Brackets
Electric Pipe Cutters	Concrete Block & Brick Machines
Electric Door Sets	
Woodworking Machines	



SLOW AND EXPENSIVE hand mortising of doors is being replaced by the electric mortising machines. With the mortiser above, 45 perfect mortises can be cut per hour—a tremendous reduction in the time and cost of this operation.

of power saws in cutting lumber and framing members. A tour of competent operative builders in widely scattered cities shows the setting up of a power saw is becoming increasingly common. This has brought another and equally important development—the detailing and scheduling of framing members and more careful planning of the house. These builders have discovered that they can standardize a large number of the framing cuts. They have prepared typical cutting details and have estimated the number of units of each type required in a typical house.

Once this has been done, it is possible to give the power saw operator a list of so many rafters of a certain type and pitch required, so many stud-

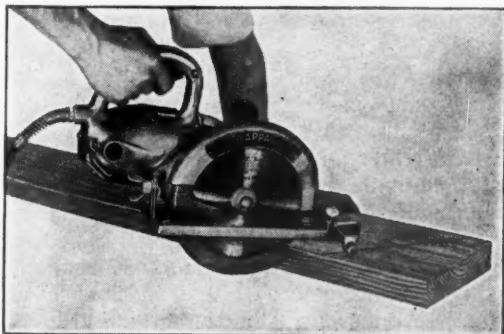


POWERFUL electric hand saws such as this reduce sawing costs more than 50%. They are an important factor in making possible more rapid construction of homes, higher labor productivity and lower costs.



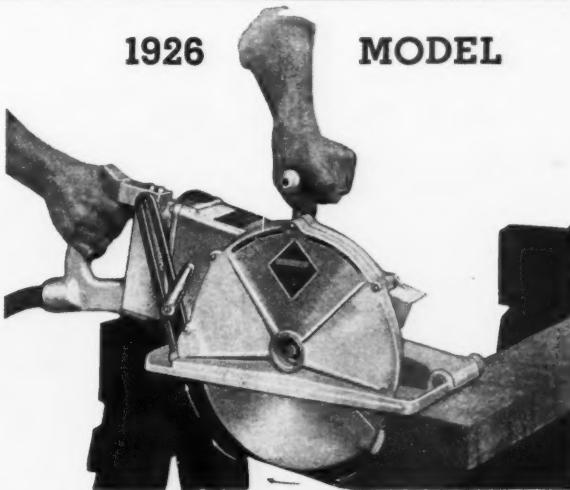
PLANING and fitting doors, sash and transoms are done quickly and inexpensively with this electric door plane. It will cut $\frac{1}{8}$ inch off a 7-foot hardwood door in less than a minute.

1937 MODEL



AN illustration of the progress in power equipment made since 1926 is the power saw shown above which is lighter, faster, more ruggedly built, and yet costs 50% less. It enables builders to pay higher wages and still give more house for the money.

1926 MODEL



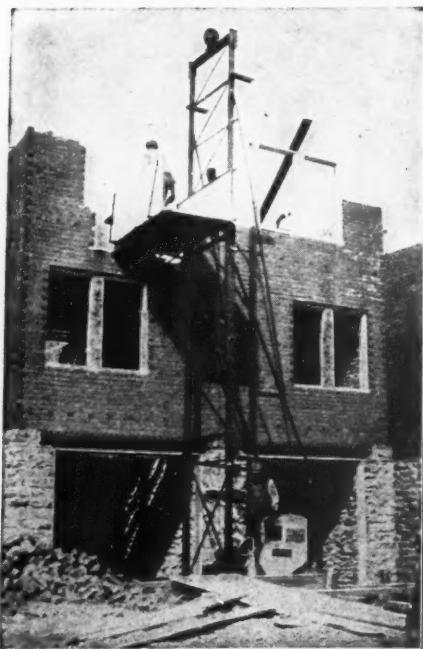
THIS power saw of 1926 was little used in house construction. Like other models it has since been improved in efficiency, made lighter, more powerful, faster, reduced in cost, and is widely used in the construction of houses.

**NOW - - - -**

MORE power, streamlined design, pneumatic tires, hydraulic brakes feature the new model trucks. Hauling costs are lower because of more economical operation, longer life, greater capacity. An important advance has been improved load distribution due to relocation of axles and cabs.

THEN - - - -

ONE of the "old timers"—did its duty then, but today improved models cut hauling costs and speed up deliveries.



PORTABLE hoisting outfit in use on Philadelphia row houses. Eliminates costly delays in handling brick, mortar, concrete.

**Explains Why Home Costs Are NOT Higher**

"Considering the tremendous improvement in home construction and the added equipment, conveniences and improvements, it is a wonder that home costs are not higher," a prominent builder declares. "An important reason why they are not higher is the more scientific use of power equipment. We keep our costs down by working more efficiently."

ding of a certain length, a certain quantity of bridging, and so on. The entire materials for the house are cut in a few hours and delivered ready for quick, accurate erection. Levitt & Sons, who have developments on Long Island and in Westchester, N.Y., use this method. Another is the Arlmont development in Boston. The operations of the builders of Montfort Hills in New York are described in another article in this issue.

In some cases the power saw remains stationary during the life of a development; in others, it is moved from job to job.

When a builder gets into the scheduling of cutting details in a house, he has to study the entire construction more thoroughly than ever before. The result is that he also figures more carefully the location of pipes, ducts and any other materials or equipment that might involve recutting or waste motion. This additional work in the office results in great savings on the job and accounts for

the fact that the home of 1937, in spite of increases in equipment and in better materials, is still reasonably priced in relation to the 1926-29 era.

To the greater and more efficient use of modern construction equipment must go credit for the fact that costs are not higher than they are. Like wheat, cotton and other farm products and practically all basic commodities, building materials have risen from depression lows. It is hardly reasonable to hold up 1932 as a basis of comparison. In relation to the years 1926-29, today's building costs are reasonable, and a large share of the credit must go to the scientific and intelligent use of the equipment now placed in the hands of builders.

An important factor not to be neglected is that modern equipment has enabled the builder to pay higher wages because it increases the productivity of his labor.

Analyzing some of the improvements and developments in construction equipment in the past decade, a trend

toward more speed, rugged construction, efficiency and ease of operation is clearly shown. Some of the developments that have had a marked effect on building costs are as follows:

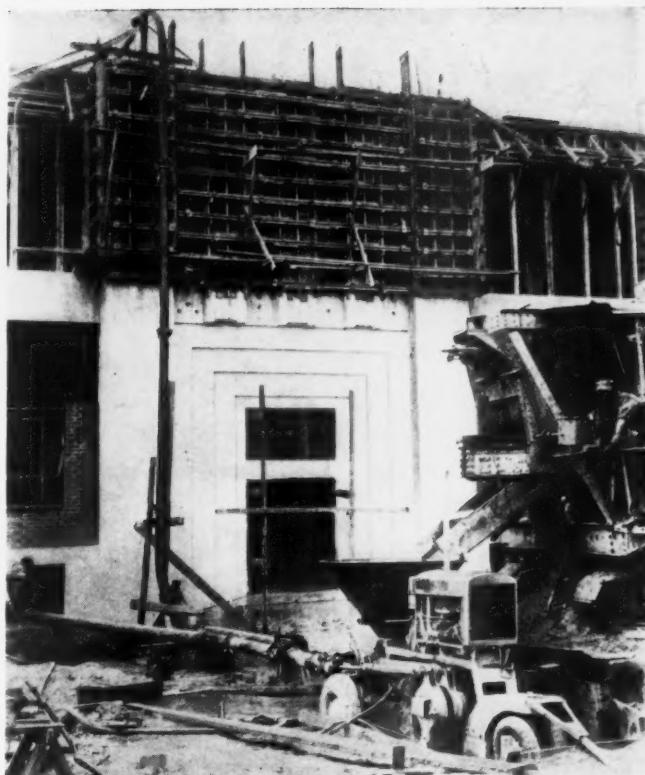
CONCRETE MIXERS—Improved models are characterized by higher speed, pneumatic tires, more rugged construction and greater ease of handling. Particularly in small home construction there is a growing use of the fast, small mixer that can be easily taken from house to house and moved about without difficulty. Many of the new models have adopted an improved rugged "streamlined" construction with all breakable parts enclosed or protected. They have set new highs for speed, ease of operation, economy and portability.

HAND POWER SAWS—The new models of electric power saws are lighter and stronger because they are built of lighter, stronger metals and alloys—many of which were unknown in 1926. A typical modern electric hand saw will cut a 16-step stair stringer from 2-inch rough lumber in only ten minutes. It will cut wood, metal, stone and composition. Powerful motors, with bearings and moving parts sealed in oil, are featured. In comparison with 1926, the models of today have greatly increased efficiency at a large reduction in cost.

A growing technique involving the efficient use of hand power saws is being developed by carpenters and builders so that the cutting of rafters and difficult angle cuts can be performed at a great saving. Boards are trimmed off the whole side of a house or along the entire length of a floor with one quick sweep. Openings are cut in a floor without the necessity of boring holes and starting with a keyhole saw. The multiple cutting of joists, rafters and studs is possible and makes a large saving in cost. Because the new models are lighter, faster and more versatile, they have become an indispensable part of the home builder's equipment.

TABLE TYPE SAWS—As has been previously pointed out, in larger operations the table type saw is being widely used to precut all materials. Increased flexibility, speed and strength make the saw of today vastly more effective than that of 1926. One popular model makes miter cuts, bevel cut-offs, rips, bevel rips, dados, ploughs, blind rabbets, shaping, panel raising and various other complicated and difficult cuts. Portability and versatility is a feature of the modern table type saws.

WOODWORKING MACHINES—Several models of portable woodworking ma- (Continued on page 190)



IN LARGER BUILDING projects, concrete is now pumped from the mixers to the forms at a considerable saving in costs. Illustrated is a new model portable machine with 6-inch pipe which will handle 15 to 20 cubic yards per hour.



IMPROVED POWER DRILLS take their place in the lineup of cost-cutting equipment. Illustrated above is a new model combination hammer and drill equipped with rubber tool retainer which holds cutting tool in hammer and serves as dust cap to keep out grit and dirt.



TRUCKS and trailers, through improved construction and more efficient operation, contribute to lower building costs. The tractor-trailer unit above has just carried 12 tons of limestone 96 miles over hilly country.

Survey of Progress in Building Products

1937

1927

Materials and Equipment Show Vast Increase in Efficiency at Lower Cost

THE PAST decade has brought "a thousand and one" changes, improvements and economies in the materials and methods of home construction. New ideas leaven the industry; new standards of style and comfort have created a mass market for numerous items of home equipment; important structural and finishing materials have been redesigned and perfected.

While construction activity has been quiet, the re-

search, engineering and design departments of the building industry's production plants have been hard at work—and with gratifying results.

American Builder editors have made an extensive survey of the field to discover notable instances of materials or equipment improved in quality and reduced in price as compared with the previous active building era, the late twenties. The findings of this survey are presented on these pages in parallel columns, contrasting the present offering of typical items, each with the comparable item of a decade ago. These studies are classified roughly into groups according to use or function in the building, starting off with *Structural Materials*.

Lumber Is Factory-finished

TODAY'S home builders who utilize the services of reputable local lumber dealers enjoy the benefits of perfected lumber that requires little or no "remanufacture" by hand labor on the job. Exact length lumber with smooth square ends must be ranked as a distinct advance in construction economy. In the house frame itself, where lumber is the material used, framing comes under three main classifications: joists, studding, and rafters. Usually in studding there is used in any single house no more than two or three different length studs. In a vast majority of cases in small house construction 8' studding is used. Where this length is specified, and such carefully manufactured lumber as Weyerhaeuser's 4-SQUARE is available, no cutting or trimming is required on any of the studs.



OLD-TIME LUMBER was not superior to today's product—this is a common misapprehension. Quality is high today and where 4-Square lumber is used needless hand trimming and squaring may be eliminated.

In houses where studs are specified in lengths which are not standard, while it is then necessary to cut the standard length 4-Square stud, even then one squaring operation is saved.

When joist lumber is considered the obvious savings effected by exact lengths may perhaps be questioned where joists overlap on girders or other supports. Here, however, it is important that one end of the joist be perfectly square and in 4-Square lumber, with its factory squared ends, the necessity for a hand squaring operation on the job is eliminated.

In framing rafters it is customary to prepare a rafter pattern and cut the lumber to fit this pattern. As with ordinary lumber the patterns themselves must be the full length of the rafter, which in most instances will range from 12' to 18'; this practice requires the use of two men.

With uniform and exact length lumber, such as in 4-Square, the cutting or notching that must take place at both ends of the finished rafter will always be constant in relation to the end of the piece of lumber to be cut into a rafter, which is not the case with ordinary lumber cut to *approximate* length. Therefore, small patterns aligned to the nearest end and easily handled by one man may be used.

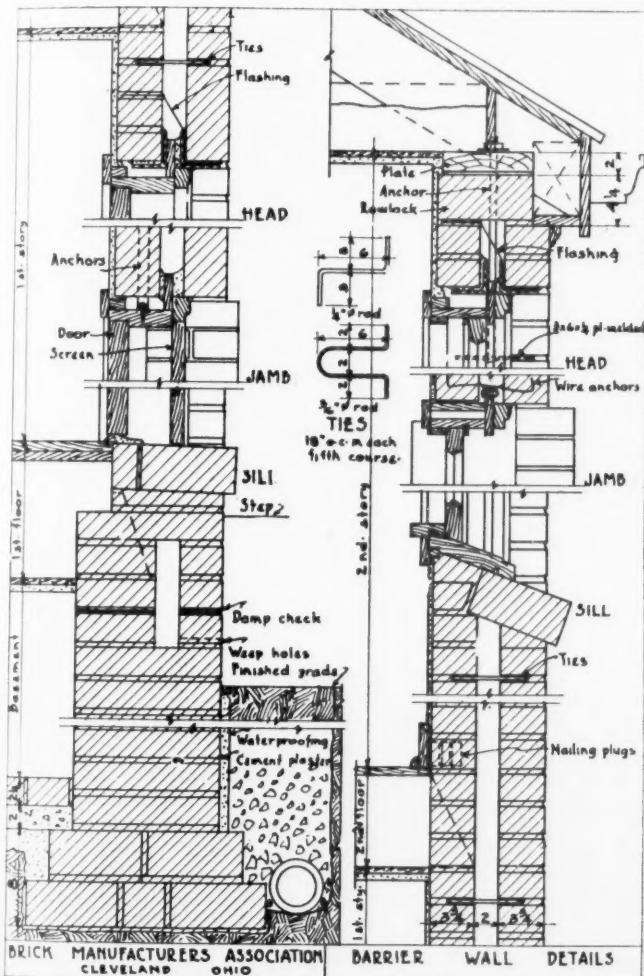
Besides the house frame, another part of the house that uses a large quantity of lumber is sheathing, used as a base for exterior walls, roofs, and interior floors. It is still common practice today to use ordinary lumber for this purpose and cut it into lengths which will terminate over framing members, and square the ends of such cuts in order to secure tight joints. This practice means that practically every board must be trimmed to the required length and squared at both ends to obtain tight construction.

Real money savings result from the use of 4-Square Endless lumber for sheathing. The principle of end-matching has long been recognized and taken advantage of in high grade finished flooring. This principle is now extended to cover sheathing lumber, and as a result again we find this volume item of lumber can now be used in house construction without any remanufacture on the job except where, at the building corners and at openings, ends must be trimmed. Where wood siding is used it is extremely important that the joint formed by two

boards meeting together be as perfect as possible. Therefore, the squaring up of ordinary wood siding requires much more care than the ordinary squaring operation in order to secure the tightest possible joint.

New "Barrier Wall" of Brick Approved by FHA

A NEW development in common brick construction which cuts costs and increases efficiency is the Barrier or Cavity Wall which has just been approved by the FHA. Introduced about a year ago, this wall has many improved features and has been subject to careful tests. It produces a warm, dry, fire-safe brick wall especially suited for residential construction.



COMMON BRICK, it is true, has not changed much in basic size or content for many years. This point is frequently picked up by uninformed public speakers who say the building industry is old fashioned because it still uses the time tried and tested products. It is not true that the brick industry has remained static. Both in the processes of manufacture and in the methods of laying, great progress has been made. Through extensive research, the quality of brick has been standardized and improved. Improved methods of using brick on the job have produced lower costs and better construction.

One of the recent outstanding developments in brick masonry is the Barrier or, as it is known in England, the Cavity type wall, which provides a warm, dry, fire-safe brick wall particularly adapted for residence construction. This type of wall has had wide and universal use in Great Britain where it has proved most satisfactory. Research and experience indicate that it has greater structural strength than the ordinary type of brick veneer or frame construction, and has a number of other features of importance.

Barrier Wall Details

The Barrier Wall detailed at left is constructed of standard size common brick $8 \times 3\frac{3}{4} \times 2\frac{1}{4}$ inches. It is a $9\frac{1}{2}$ inch hollow wall laid in common bond without headers, and consisting of two wythes, spaced two inches apart and bonded together at every fifth course with metal ties on 12" centers. The metal ties are $\frac{1}{4}$ " round rods, bent in the form of Z's, the total length of the rods before bending being approximately 12 inches.

By separating the brickwork of an external wall into two separate substantially isolated leaves, the following advantages accrue:

1. Rain and moisture, collecting on and in the outer leaf, cannot penetrate to the inner leaf (and thence to the interior of the structure), provided adequate attention be paid to associated detail.
2. If the cavity be closed, the stationary air in the cavity wall will act as a thermal buffer, to prevent heat loss outward during cold weather and to keep the interior cool during hot, sunny weather.
3. If the cavity is ventilated, such moisture as may penetrate to the inner face of the outer leaf is quickly evaporated and dispersed, so that excessively damp conditions favorable to condensation and to the development of dry rot in associated woodwork cannot arise. It must, however, be noted that, by the introduction of such ventilation, the thermal buffer effect of stationary air, obtainable by closing the cavity, is sacrificed, particularly during cold weather, when the warm inner leaf induces up-currents which carry off some heat.

Steel Floor Units Cut Labor Cost

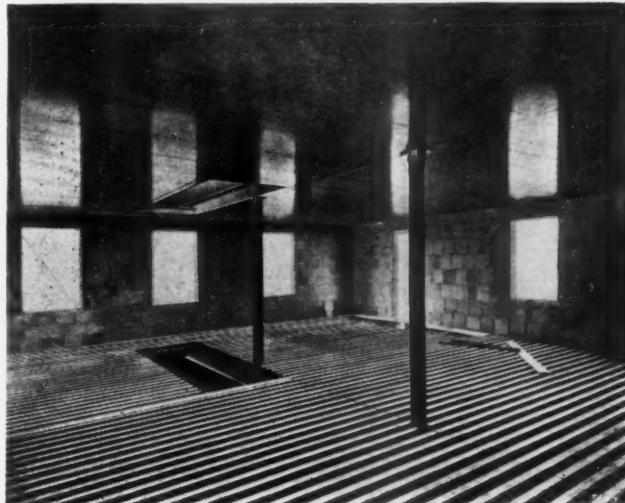
ROBERTSON STEEL FLOOR, introduced to the building market in 1931, is used extensively today for every type of building, including residential construction.

For residences, a special unit (FKX) is used, having a cellular beamed top surface and a flat steel plate ceiling. Fill is customarily applied to the top surface (a lean mix) only level with the tops of the cells. Plaster or plastic or oil paints are applied to the underside of the units forming the ceiling.

Only $4\frac{1}{2}$ inches deep, these units save in excavation and wall height. Savings also are provided by the ease and quickness with which the units are laid. Two men can lay the average residence floor in one working day.

Fire-resistant, termite-proof and almost sound-proof, this floor will not shrink or crack and provides raceways for electrical wiring and cells for cold air returns for the heating system.

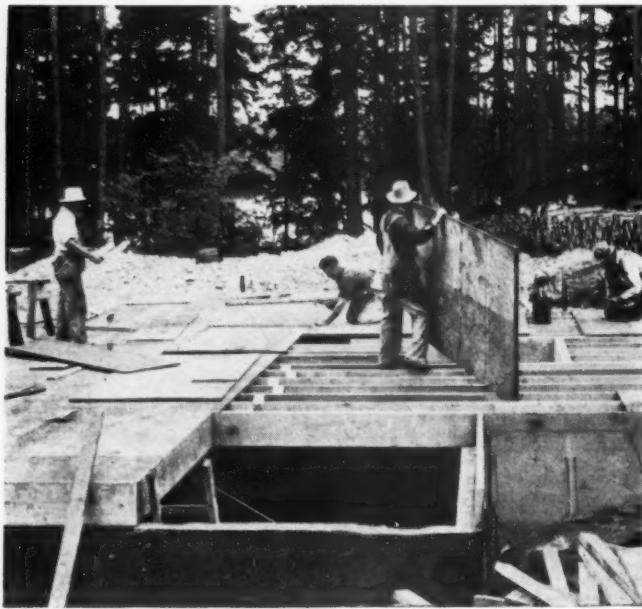
An impartial analysis shows that to bring standard types of construction up to the quality of this floor (providing the same advantages), their cost would be greatly in excess of the cost of Robertson Steel Floor.



SECOND and attic floors of a residence in Mt. Lebanon, Pa., using the Robertson Steel Floor system.

Fir Plywood Marks Long Forward Step in Economy Construction

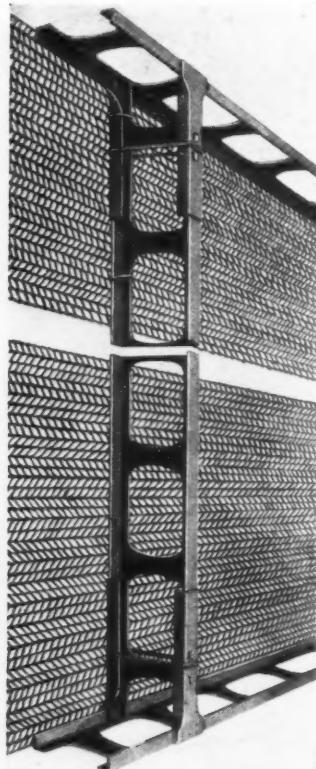
THE illustration below shows carpenters laying a subfloor of Douglas fir plywood panels that have just been stripped from the concrete forms. Plywood panels also will be used for sheathing in this house, because of their strength and rigidity, nail-holding strength for shingles and siding, imperviousness against infiltration of air and dust, and their original economy. Plywood has many other uses in today's houses.



Simplified Hollow Partition Studs Save From Twelve to Fifteen Per Cent

NEW Truscon hollow partition stud, introduced in 1937, is erected more easily and in shorter time than was required in putting up the double-channel type of partition described at the right. The hourly rate of men erecting the new type of partition is higher than in 1926, but the installed cost of the complete partition is less today. The new material costs less than the steel channels used in 1926. Lower first cost of the present material, plus a saving in erection, reduces cost of putting up a similar partition in 1926 from 12 to 15 percent.

This new stud is made in one integral section. No clips are necessary to hold the section together. Adjustable shoes at the top and bottom provide for slight variation in the height of a partition. This adjustment eliminates the necessity of cutting channels to fit. Runners now are provided for top and bottom of the partition. They assure accurate and quick alignment of the partition. It was not possible to align the old type channel without a considerable expenditure of labor. Greater ease of installation, and economics resulting from improvements have increased use of hollow partitions.



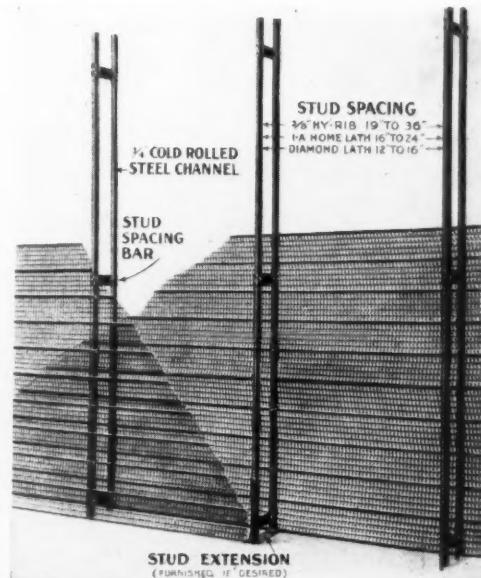
IN 1926 the infant Douglas fir plywood industry produced only three grades, used principally for door panels, furniture panels, and drawer bottoms. Production totaled 172,000,000 square feet, whereas 1937 production may reach 1,000,000,000 square feet. Prices were more than 50 per cent above current quotations. The material was not sold by lumber and supply dealers.

Today Douglas fir plywood is marketed with eight commercial standard grades. Stock sizes range up to 4 feet wide and 8 feet long. Standard thicknesses vary from $3/16$ " 3-ply to $1 3/16$ " 7-ply. New glues have been perfected, and old types improved.

Today a complete stock of Douglas fir plywood panels may be found in nearly every retail lumber yard. Its first cost in the popular thickness of sheathing, compares favorably with any other sheathing. It has 100 per cent covering capacity, needs no allowance for overlapping, and fits standard joist and stud spacing without cutting or waste. Nailing is about 50 per cent cheaper. Large sheets can be handled by one man, and smaller common nails are used, spaced 6 inches at edges, and 12 inches elsewhere.



THE OLD WAY was more involved. In 1926, when it was desired to put up a hollow partition for fire protection, to conceal water and steam pipes, or electrical conduit, they were formed over $3/4$ " cold-rolled steel channels. These channels were placed in a vertical position, and clipped together with metal spacing clips, to form a 2" solid partition. The only way in which variations in height of the partition could be taken care of, was by cutting channels, in the field, to fit. Today, metal runners are provided for the top and bottom of the partition, to assure quick, accurate alignment, and adjustable shoes to take care of variations in height.

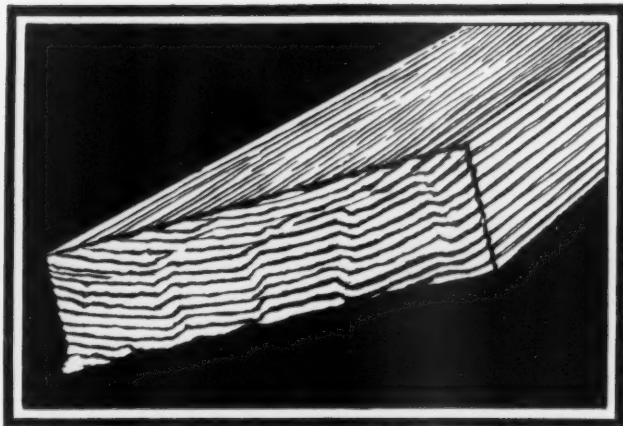


THE NEW partition stud shown at the left is adjustable, easy to align, and costs less. The old way is shown at the right.

Better Lumber-Lower Price



1937 The above illustration shows one end of a Southern Pine lumber floor joist (size 2 x 8—grade No. 1 dimension), which is an important item in residential construction. This lumber now can be obtained bearing the Association grade- and trade-mark, a guarantee of satisfactory performance in use. This lumber is correctly seasoned, because moisture-content provisions today are a part of lumber grading rules. If desired, these joists may be ordered with eased or rounded edges. This simple improvement makes them much easier to handle and install. Here is a better lumber product on which the f.o.b. mill price today is from 10 per cent on some lengths, to 15 per cent on others, lower than in 1926. The average f.o.b. mill price today in 18' and 20' lengths is \$25.88. Compare this figure with the quotation on the right.



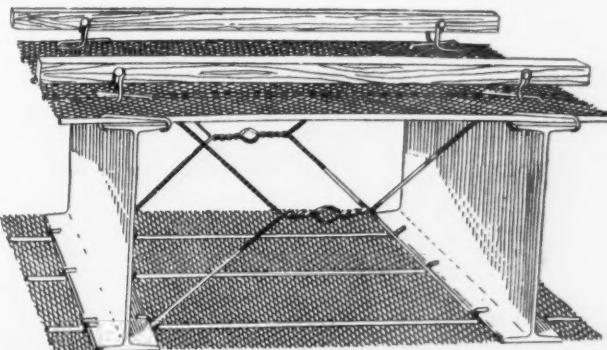
1926 This illustration shows the same item as the one on the left, manufactured from the same type of tree, and correctly graded at the mill. It carried no grade- and trade-mark to guarantee conformance to grading rules, and to preclude juggling. No definite limit as to moisture-content had been established, and eased or rounded edges had not yet been developed. Average f.o.b. price in 1926, 18' and 20' lengths, \$30.46; higher than today's price for the superior product shown at the left. When dimension lumber of this type was bought and used in 1926, few persons even considered the possibility that it could be improved. There it was just as nature had grown it, and man had processed it. Yet, by the single device of establishing a uniformly low moisture content it was improved, its usefulness and value increased.

Junior Beam Construction Simplified and Improved

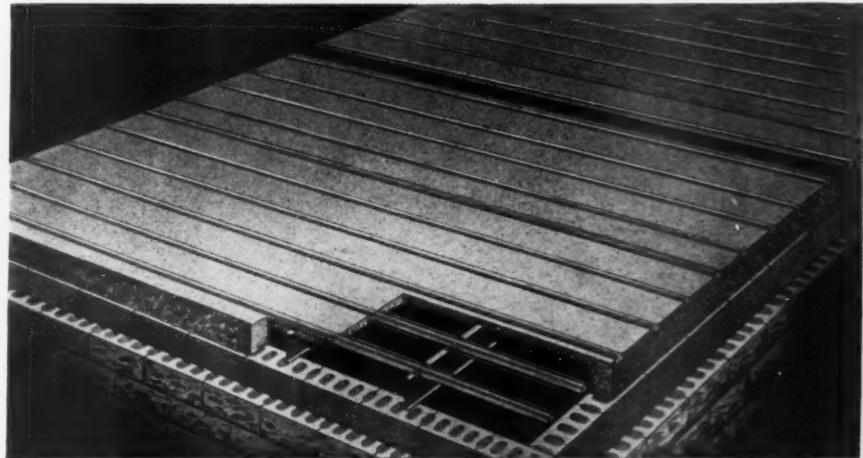
IN 1926, Jones & Laughlin Steel Corporation, Pittsburgh, Pa., introduced a new structural steel product, the J & L Junior Beam. This new shape was designed primarily for use in floor construction, and as purlins and rafters in roof construction. It was designed to provide economical, light-weight, and fire-resistant construction. When junior beam sections were installed in houses, they required accessories such as wire mesh, upon which concrete for floors was poured; also clips, hangers, and braces that would assure rigid support of the sections when in place. In 1927, small quantities of junior beams, as used in homes, sold at an average price of \$99.00 per ton. Larger jobs that were serviced direct from the mill in carload lots averaged \$80.00 per ton. The foregoing figures covered material only, and did not include fabrication, which was necessary to the use of junior beams at that time. Since then great strides have been made in the production and use of these beams.

Today, junior beams are quickly and easily installed in residential floors, with few accessories. Concrete is poured into removable wooden forms that later are used for roof sheathing. These forms also anchor members to the foundation, and assure a rigid, vibration-free, termite-proof, and shrink-proof floor. Present mill prices for junior beams are 40 per cent less than they were in 1927; warehouses and distributors sell them for 25 per cent less than ten years ago. Assembly costs have been reduced by elimination of many of the accessories that were necessary for installation in 1927. Fabrication of members for residential floors no longer is necessary, eliminating an additional item of cost.

RIGHT: Efficient junior beam installation of today.



ABOVE: Early installation of junior beams, with accessories



Improved Efficiency, Durability, Styling, Higher Values

Gypsum Products Perfected

DETAILS of ways in which two widely used basic building materials have been improved, yet made lower in cost during the past ten years, have been provided by the United States Gypsum Company. As typical products in a complete line of building materials, the company has selected for illustration the gyp-

could be made in a product like gypsum lath, over a ten-year period, yet the improvements that have been incorporated in the product today make the old Rocklath distinctly obsolete.

The size has been changed. The present product is 16" wide, instead of 36". This reduction in width makes the pieces much



PERFORATED Rocklath partitions, plastered in the approved manner with gypsum plaster have a one-hour fire rating.

sum lath, familiar to the trade as "Rocklath," and the gypsum wallboard "Sheetrock," equally well known. (Rocklath is a product used in new buildings, and Sheetrock is primarily used in remodeling.) A picture of the development of these two products exemplifies the company's contributions to improved construction in its two important branches. It is worth noting here that the inclusion of Sheetrock in the analysis is significant of one fact not always recognized. Any increase in new building activity is followed by a closely corresponding rise in remodeling. New building takes the front of the stage, because it is more spectacular, but the volume of remodeling work rises with it, and represents a dollar value that no contractor or dealer should overlook.

At first glance it might seem unlikely that important changes

easier to handle and easier to apply. The present product is shipped in bundles, instead of loose, so that it is easier to handle in transit, or in stock, and arrives on the job in better condition. It is lighter in weight, and at the same time stronger.

Improvements and changes have widened the uses of gypsum lath. It is available today with an insulating metal foil, known as Insulating Rocklath; and with perforations, known as Perforated Rocklath. Neither of these products were available a few years ago. Perforated Rocklath is a particularly useful product in today's market. A partition of this material, plastered in the approved manner with gypsum plaster, was shown to have qualified for a one-hour fire rating in tests conducted at the Bureau of Standards. The valuable added fire protection of this economical product is an important contribution to safer homes, yet it now is definitely lower in cost.

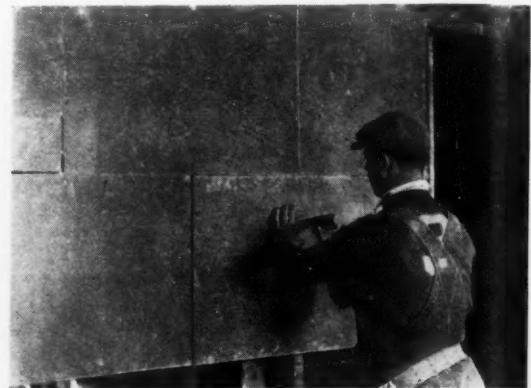
The changes that have been made in Sheetrock during the past ten years likewise favor the dealer, contractor, architect, craftsman, and owner. The product now is shipped in bundles, rather than loose, so that it is delivered in better condition. The boards are finished with a highly decorative face, a decided contrast from the darker, rougher, and more absorbent surface of the earlier type. It is lighter in weight, yet stronger. A most impressive change is found in the various new finishes that are available today and

were unknown ten years ago; Wood Grained Sheetrock, with a face that reproduces wood; Sheetrock Panelwood, with a face of real wood veneer; Sheetrock Tile Board, with a tile-like surface; Insulating Sheetrock, with a backing of insulating metal foil. The newest development is Recessed-Edge Sheetrock. It provides an easy and economical method of joint treatment, and makes possible wallboard construction of great strength. Here again, all improvements are offered in a product that is definitely lower in cost today than in 1927.

These items are typical of the manner in which manufacturers of building materials have improved their products, yet have managed to produce them at lower costs. By absorbing costs of improvements, rather than by passing them on, manufacturers such as the United States Gypsum Co. have widened the usefulness of their products, and have made a contribution to the building industry.



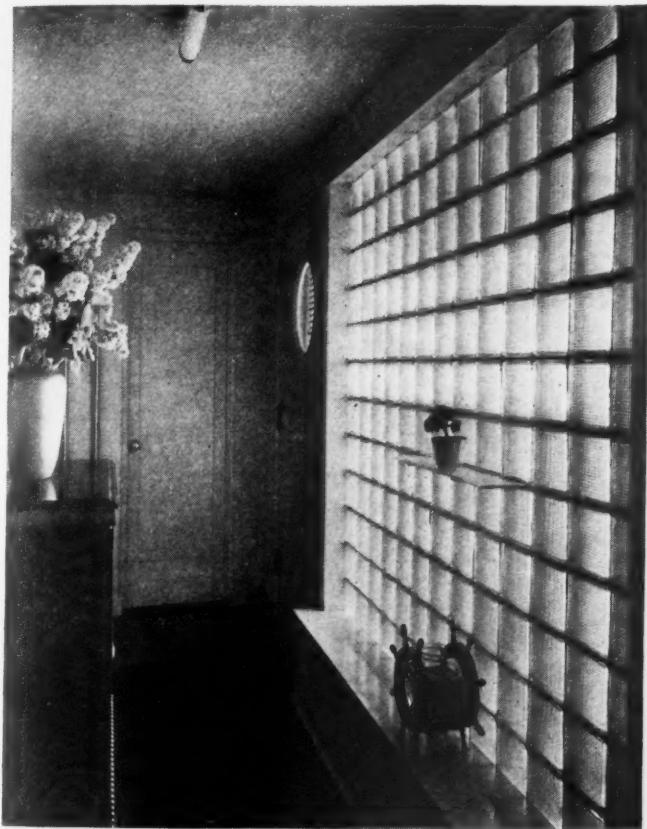
THE WALLS of this attractive, modern room have been finished with Sheetrock, now finished with a highly decorative face, and in wood grains and veneers, or tile-like surface.



OLD type Rocklath being applied.

Glass Block Is Sensation of Year

ALL of the old sayings about people who live in glass houses have been revived, and have become a reality through the development of the glass block. A steadily increasing number of people now live in glass houses, and consider themselves very fortunate to have homes in which this sensational new building product is used. Insulux glass blocks, a depression-born product of the Owens-Illinois Glass Company, were unknown in 1929. Today such blocks are being used for exterior walls of homes, for partitions, in basements, and for every type of commercial and industrial building.



Applied Cost of Sisalkraft Is Less

THE real cost of a building paper is the applied cost, which depends on price of the paper itself, speed of application, patching of punctures and tears, waste, the use of batten strips, and ability to handle it on a windy day. The applied cost of Sisalkraft is low, comparable to the cheapest papers, because batten strips are unnecessary, there is no waste, application is speedy, one man can handle it without tears, even on a rainy day.

The rapid increase in uses of Sisalkraft during the past ten years is largely a result of the protection it delivers. It is a built-up, six-ply product. More than a half mile of sisal fibers, laid crosswise and lengthwise, are placed in each square yard of Sisalkraft. These fibers are imbedded in an asphalt core, and both are enclosed between kraft cover sheets under heat and tremendous pressure. When used over sheathing, under roofing, floors, it provides an unbroken, waterproof, windproof, reenforced protection.

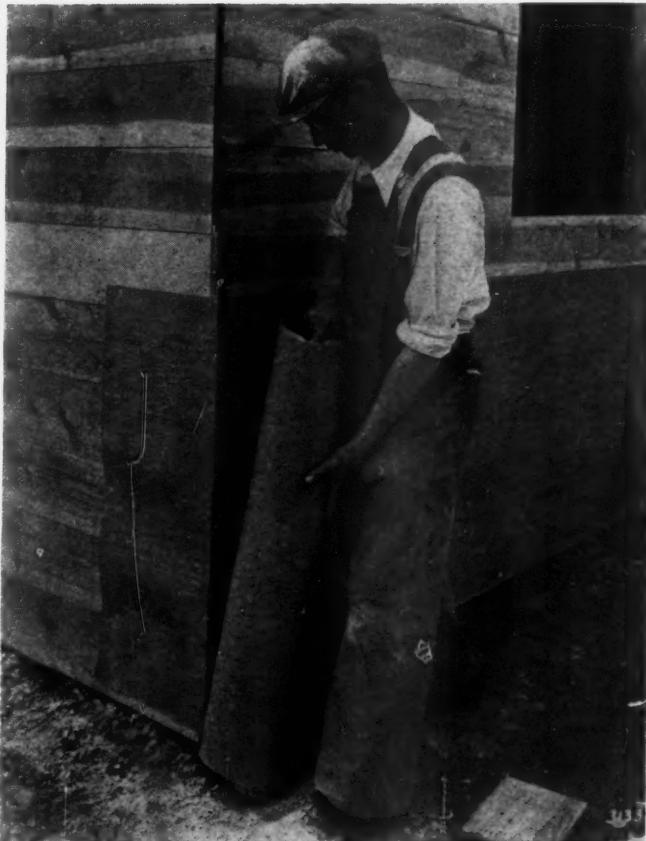
The accompanying illustration on the right shows Sisalkraft being placed around the corner of a house, where there must be joints that cannot be made weather-tight without the use of a quality building paper. Unless these corners are properly protected they become vulnerable spots for the entrance of water and wind. It is pointed out that the average building paper is most apt to fail at these vulnerable spots, that it may tear, rip, or crack when pulled around sharp building corners, but that Sisalkraft, because of its strength and durability, is built to more than cope with the corner-protection condition.

NOTHING LIKE IT BEFORE—Introduction of Insulux glass masonry opened up opportunities for an unlimited number of new architectural effects that could not be achieved with any of the materials formerly available. The possibilities have barely been tapped, despite the thousands of installations that have been made, and the many new effects that have been produced.

The glass block is the result of long research. It is made in three convenient sizes. The blocks are laid up by masons using standard mortars. When placed in a wall or partition the blocks admit a natural diffused light, yet are not revealing, so they have found many applications as walls for kitchens, bathrooms, sunrooms, and stairways of houses. The blocks are hollow and are partially vacuum sealed, so that they retard heat flow. A glass masonry wall $3\frac{1}{8}$ " thick is said to have the same insulation value as a 12" brick wall, and needs no accessory materials such as plaster, paint, or lath. From a materials and labor cost standpoint, this reduces general cost of a structure. Further advantages are that they are easily kept clean, cut illumination costs, and reduce the amount of illumination equipment usually required.

Among numerous applications of glass blocks in houses, we find them placed in basement foundation walls to admit light to a downstairs recreation room that otherwise might be gloomy; square or circular insets in walls adjoining front entrances, to provide natural light for entrance halls or closets, for bedrooms, baths, and sunrooms, wherever it is desired to combine unusual decorative effects with subdued but good natural lighting.

Glass blocks are extensively used in commercial, industrial, and public buildings, schools, and hospitals, in both new work and modernization. In factories they provide better lighting for work rooms and stairways. In schools they are particularly useful because they provide diffused daylight, yet afford privacy and avoid annoyance of exterior activities that tend to distract the attention of students. Store fronts and walls of glass masonry are particularly effective because the use of colored illumination on the inside produces striking effects that attract attention of passers-by.



Walls, Floors, Ceilings Combine Style, Economy

DURING the depression manufacturers of building products spent millions of dollars in research and development work to improve the appearance, increase durability, and lower applying costs of materials for walls, floors, and ceilings of homes. They were interested in gaining a better position in the competitive race for the enormous home-building market. As a result, home owners today can get many attractive, new effects that were not available in houses of 1926 or 1929, and enjoy greater economy in the applied costs of materials used. They have wider choice of materials, colors and finishes than ever before.

Producers of plasters for walls and ceilings have developed new finishes, textures, colors, and materials that can be used

with new bases, designed to shorten construction time and drying time. Exponents of dry-wall construction have developed new materials and finishes, many of which were not available a decade ago, and which have materially reduced construction time. Manufacturers of flooring and floor coverings have been particularly active, with the result that many new architectural effects now are available.

Various branches of the lumber industry have collaborated to develop complete, dry-wall, all-wood interiors for those who prefer the natural beauty of wood grains, and have worked with producers of finishes to develop new color effects. The illustration below shows an attractive new all-lumber interior.



DRY-WALL, all-wood interior in a Memphis, Tenn. Model Home.

Asbestos Wall Boards for Baths, Kitchens Avoid Tile Setting Cost

AN important development in decorative building materials during the depression is the advance made in J-M decorative asbestos wall boards as a result of the company's intensive research. There was need for a product that would reduce the cost of laying individual tile, yet would have a durable finish that could be cleaned easily, and could be produced in a wide range of colors.



LACK OF LARGE-UNIT TILING a decade ago ran up the cost of vitreous walls. Decorative wall boards were developed in an effort to reduce the cost of covering kitchen and bathroom walls. In 1929, Johns-Manville manufactured and sold a decorative board consisting of a sheet of flat transite covered with a lacquered finish. It was fireproof, easy to clean, and attractive in appearance. The finish, however, was not as durable as the 1937 product.

Since 1929, in addition to the greatly improved J-M asbestos wainscoting, previously mentioned, an entirely new asbestos wallboard has been developed. It is known as J-M Asbestos Flexboard, and is shown on upper walls of the bathroom illustrated at the left. This new material makes it possible to provide a hard, smooth, permanent finish in a fireproof board that saws or nails like wood. It has a decorative finish, or the standard board may be used as a utility lining for all sorts of buildings, such as garages, basements, farm buildings, laundries. The decorative finish is used in bathrooms, kitchens, and many types of rooms. It is so flexible that it will conform to many curved surfaces, and is easy to clean. The color goes all the way through the sheet, and the polished surface is easy to maintain. Its cost cannot be compared with anything available in 1929, but it provides a decided economy when compared with cost of materials for which it is substituted today.

J-M Asbestos Wainscoting, also illustrated at the left, is today produced with a highly polished, baked-on finish that is permanent and durable. It is available in a wide range of colors in plain or scored sheets, and in replicas of the finest marbles. Many striking decorative effects can be produced with this new material. The development of attractive metal mouldings has been an important factor in the increased use of decorative wall boards, because the two materials combine to produce striking modern effects.

Oak Flooring Down 15 Per Cent

A THIRTEEN-YEAR comparison of the yearly average selling price of oak flooring produced by the entire oak flooring industry shows a 15 per cent reduction since 1925. The following table shows the average selling price per thousand board feet by years:

1925	\$67.24	1932	\$35.56
1926	65.58	1933	45.00
1927	63.33	1934	52.00
1928	55.37	1935	46.00
1929	62.59	1936	45.00
1930	53.14	1937	55.00
1931			41.40

No product comparable to Bruce Finished Hardwood blocks was available in 1929. They are a result of pioneering by the E. L. Bruce Co., Memphis, Tenn., and consist of squares of hardwood flooring joined by a patented fabricating method, side- and end-matched, and factory finished. They provide the charm and beauty of parquet-type floor at a reasonable price, may be nailed or laid in mastic in either new or old houses, are ready to use as soon as they are laid, and are available in all grades of oak, maple, beech, and walnut.

BRUCE fabricated blocks reduce laid cost of floors.



Linoleum Flooring and Wall Coverings Improved

THE linoleum industry has more than kept pace with modern trends in home building by developing attractive designs, color combinations, new materials, improved methods of laying and applying its products. The illustration, lower right, shows a good example of a typical 1926 kitchen, with a then-popular linoleum pattern on the floor. The left-hand picture shows an attractive, efficient 1937 kitchen, with a floor of Armstrong's linoleum that reflects the modern trend, as do the furnishings.

During recent years linoleum has extended its decorative influence beyond the kitchen to bathrooms, sun-rooms, nurseries, dinettes, entrance halls, basement recreation rooms, and an attractive wall covering known as "Linowall" provides an additional fade-proof, washable material with rich decorative possibilities, widely used in both new building and remodeling.

The Armstrong Laying Method provides for linoleum installation over any smooth underfloor of wood, concrete, metal, or stone that is not exposed to excessive dampness. A sound-absorbing

cushion of lining felt is pasted to the underfloor, and the linoleum is pasted to the felt. Seams are made secure with waterproof cement. Where neat, easy-to-clean joinings of wall and floor are desired, Armstrong's metal back, or flush type cove and base is suggested. These accessories form a curved joining that simplifies sweeping and protects the wall base.

For basement recreation rooms, where a concrete floor is in direct contact with the ground, and dampness prevents the use of linoleum, Armstrong's Accotile (an asphalt type material, resistant to water) is used. These floors are laid in individual tiles on an asphalt cement. Game boards for shuffleboard or hopscotch can be built right into the floor if desired. Practically any design that can be laid out on paper can be executed.

Linowall, available in 22 patterns of tile, marble, and wood-grain effects, finds new uses in colorful modern houses, because it can be inlaid with designs in metal, glass, carved linoleum, or other colors of the same material.



Improved Efficiency, Durability, Styling, Higher Values

"Relief Ceilings" Raise Wallboard Use to a New High

THE illustration at the right shows a typical dining room of a decade ago. Walls and ceiling are covered with Upson board. The crevices between panels are covered with narrow single strips. The picture below shows a modern living room with Upson board paneled walls and relief ceiling. The development of duplex mouldings to cover wallboard crevices has raised this product to a new high of usefulness. One objection to the use of wallboard has been eliminated by the introduction of Upson duplex mouldings and relief ornaments. They now

can be applied without visible joints, by any good contractor or carpenter, and produce the artistic beauty of expensive moulded plaster. A number of improvements have been made on the board itself. Surfaces are treated with a priming preparation that resists penetration of dampness and provides a bond for paint. This eliminates the need for a priming coat, usually applied to wallboard. Costs, including freight, are about 5 per cent less than they were ten years ago, although the product has been improved.

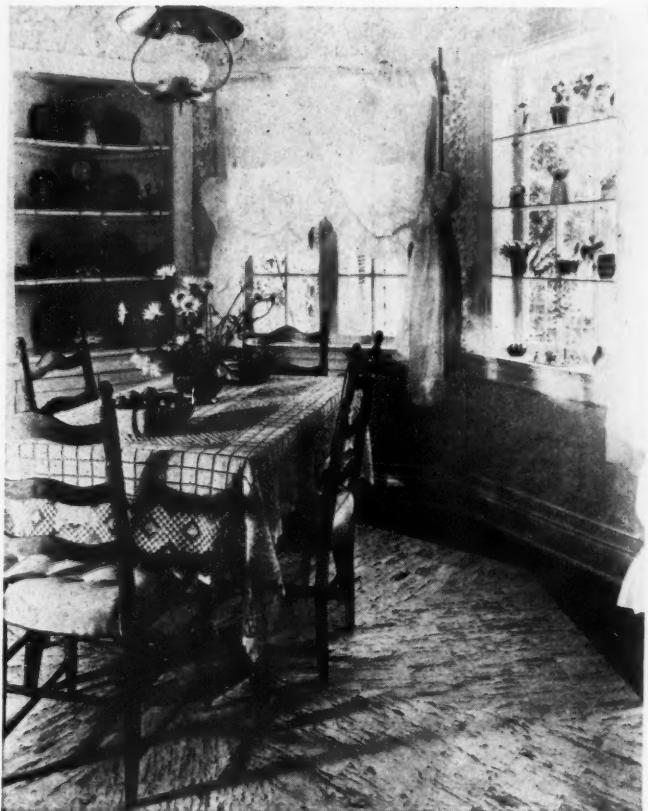


Rubber Flooring Popular Today

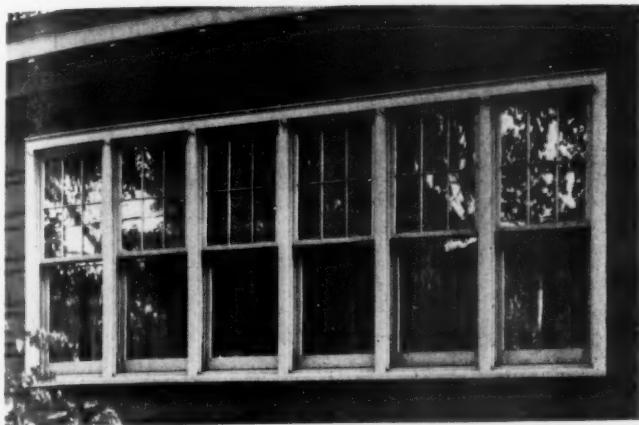
COMFORTABLE resilience, sound deadening, and economy are cited as several reasons for the present popularity of rubber tile flooring. Installations of this colorful material are found in kitchens, pantries, breakfast rooms, sun rooms, bathrooms, halls, vestibules, dens, nurseries, and recreation rooms. Pictured at the right is the breakfast room of a recently completed Los Angeles home. It has a Goodrich rubber tile floor, with main body of the floor in pink, a black border, and a star design in the center under the table.

Rubber tile floors are easily cleaned, because the smooth, non-porous surface keeps dirt on top where it is easily removed. Surface marks made by cigarette burns, ink, or other liquids may be removed easily, leaving no discoloration. Curved baseboard is available in colors to match tiles, and in varying heights. Rubber thresholds, plinths, stair-treads, and other accessories are provided. Tile is laid in a waterproof cement, then rolled.

Rubber tiling also is made in larger sections for use as a wainscoting material. Caps and corner angles are provided for wall installations. A wide range of polychrome effects and rich plain colors is available.



Factory-Built Windows Reduce Labor Costs



Curtis "Silentite" Windows Weatherproofed in Factory

THE perfection of a complete window unit with factory-built weathertightness is one of the important advances of the past decade. It is a strong contribution to more house—and a better house—for the money today.

The Silentite pre-fit window unit consists of a frame available for every type of wall construction; a window pre-fit to that frame in many designs and sizes; spring balancing and double-contact metal weatherstripping devices; Mitertite trim with patented joints; screen pre-fit; storm sash likewise pre-fit to the frame opening. Also included are the attaching hardware devices simplified and improved. Frame and sash are of Ponderosa pine, dipped before glazing in a preservative oil. The windows are glazed with Lustraglass.

OLD FASHIONED double-hung windows such as were used in 1926-29 were costly to install because of the laborious work required on the job. They were costly to maintain because they were not tight and weatherproof and wasted heat. The modern Curtis Silentite pre-fit unit eliminates much on-the-job labor and substitutes efficient factory construction. The materials are delivered plainly marked in cartons, clean and ready for quick installation. The advances in the 1937 products over 1926 may be briefly summarized as follows:

FRAME: Sturdy; weather-tight; thicker parts; greater sill slope, better drainage; narrow mullions and outside casting; better trim nailing surface; narrow trim economically applied; better plaster key; more quickly assembled; fits any type wall.

WINDOW: Fitted at factory, a saving in final cost; clearance in width, height and thickness eliminates sticking; glazed with Lustraglass; putty rabbet and Curtis putty groove specially primed; back puttied; completely machined.

WEATHERSTRIPPING: Metal-to-metal, zinc head and sill members; copper-bronze double leaf; double contact; expanding vertical side weatherstripping running in copper-bronze channels in the jambs; highest ratio against air infiltration; lower fuel costs.

TRIM: New patterns of Mitertite pre-fit narrow trim. Applied to frame without expensive preparation of weight box. Added beauty at a saving of material and labor. Narrow (2½") mullion casings. Stops are part of trim.

SCREENS: Flush molded, 1½" stock mortise-and-tenon construction; 16 mesh antique bronze or galvanized wire; pre-fitted for the opening; bottom rail and stiles rabbeted and bottom rail cut $\frac{1}{8}$ " for sill drainage.

STORM SASH: Multiple light design; bottom row of lights held in insert which swings inward to provide adequate ventilation; delivers fresh air in quantities without draft.

Steel Casements Perfected

A HOST of important improvements and perfecting details have been added to steel windows which have added to their value in the 1937 home. In 1937 Fenestra steel casements cost approximately 10% less than in 1926. There are about 250 types to select from, as contrasted with 34. A major improvement just being announced is the Bonderizing of the steel casements—a process demonstrated to be a durable rust preventative.

The 1937 window is better looking, stronger, easier to operate. Hardware is bronze finish; hinges are cut from especially rolled steel sections, making them compact and attractive.

The factory-built steel window, now supplied with wood surrounds and steel fins make installation easier. Steel casings which take the place of head and jamb trim and stool and apron can be furnished for all types. Steel frame bronze mesh screens are provided, and an outstanding advance has been the perfecting of storm windows which fit on the inside and are standardized to this type of window.

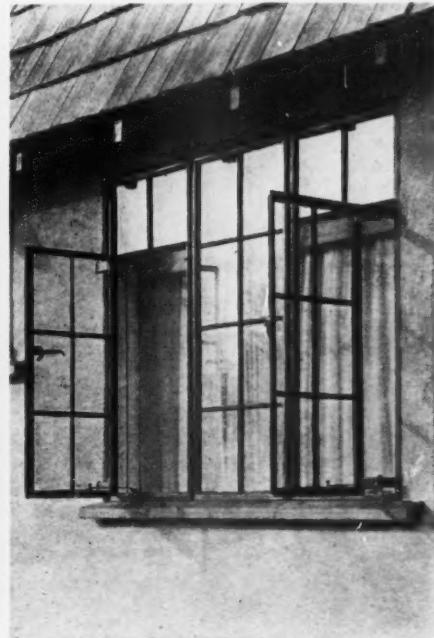
The engineering department of this firm has consistently pioneered and improved its product. The perfection of the winter storm window has enabled the steel window to keep in step with air conditioning.

As the name suggests, the new year 'round window was designed to give a greater degree of comfort and protection to home owners both summer and winter. It was designed particularly for installation in modern air-conditioned homes and buildings. The unit at once eliminates frost and condensation.

IN 1926 Fenestra was pioneering the idea of steel casement windows for residences. There was a limited selection of types, hardware consisted of bulky hinges, an iron peg and stay operator, and iron locking handles. Screens were not manufactured; carpenters built inside wood screens as a rule. Wood surrounds had not been thought of; storm windows were unknown. The window made this way was less attractive.



1937 Model



1926 Model

Improved Efficiency, Durability, Styling, Higher Values

Non-Ferrous Metal Windows Developed for Home Use

THIRTY years of experience in the building of non-ferrous metal windows for ocean liners and other ships, public and private buildings has been applied by The Kawneer Company, Niles, Michigan, to production of a double-hung window of aluminum or bronze, designed and priced for the average home.

Each Light Sealair window is sold as a complete unit, completely assembled and glazed at the factory, with hardware attached, pulleys placed, and weights included. The finish, obtained by burnishing the metal itself, requires no painting. Savings on installation costs are stressed, for the complete window unit can be placed in the opening in one movement by one man, and is ready for use in an hour.

The windows are available in standard sizes for all average home needs. Extreme simplicity of line and unobtrusive hardware permit use of these new windows with either the most advanced types of domestic architecture, as well as conventional types. Sash may be divided as desired. In case of glass breakage, sash may be reglazed without removing it from the frame, by utilizing a patented glazing stop. Special screens with bronze or aluminum frames and screen cloth are available, together with aluminum or bronze storm sash. These new windows are used in either new houses or in remodeling.



EASY operation, weathertightness, and complete elimination of upkeep expense are among the features of this Kawneer Light Sealair Window.

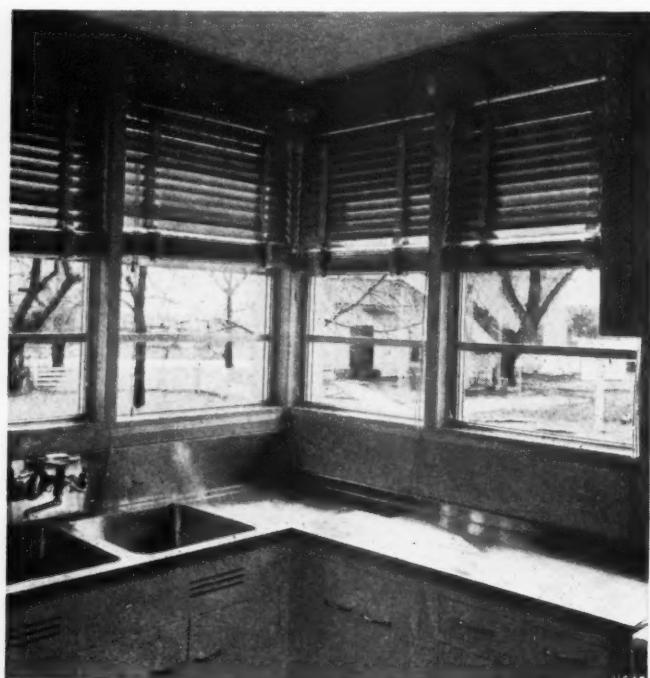
Aluminum Windows from Streamlined Railroad Cars to Homes

A RAILROAD car leads a hard life. It is bumped and jolted about in all kinds of weather. Its windows get more hard wear and exposure in a day than they would in a year in the average home. A new aluminum window sash, developed and fabricated by the Adams & Westlake Co., Elkhart, Ind., will be

found on the famous Zepher, and other streamlined trains, and the new "silent" surface cars operated by the Chicago Street Railway Company. It was reasoned that a window sturdy enough to withstand the constant vibration of railway rolling stock should deliver new and higher standards of satisfactory operation in houses, and so the recently perfected unit was introduced to the building industry.

The Adams & Westlake aluminum sash is fabricated as a complete unit, ready for quick installation into a steel outer frame set into a rough wall opening. Ease of installation effects savings in time and labor costs, and windows are ready for immediate use. Through unique use of a spring band, no sash cords, chains, or weights are necessary.

The windows are guaranteed not to rattle, and are dust- and rain-proof. In a recent laboratory test a high speed blower fan delivered the equivalent of a 40-mile wind into the face of a stock Adams & Westlake window. A stream of water was then poured in front of the blast of air, so that the water was blown against the window with terrific force. Not a drop of water seeped through edges of the frame, and a lighted match held in back of the window along edges of the frame showed not the slightest effect of air current from the fan.

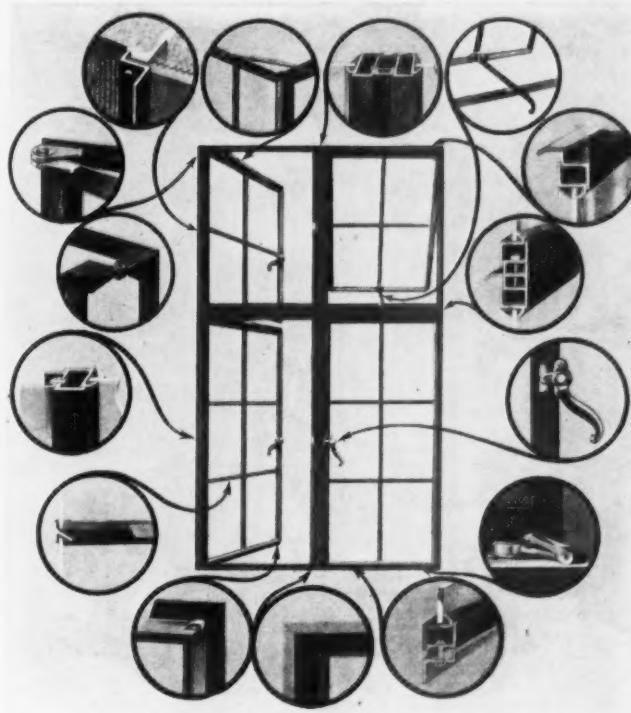
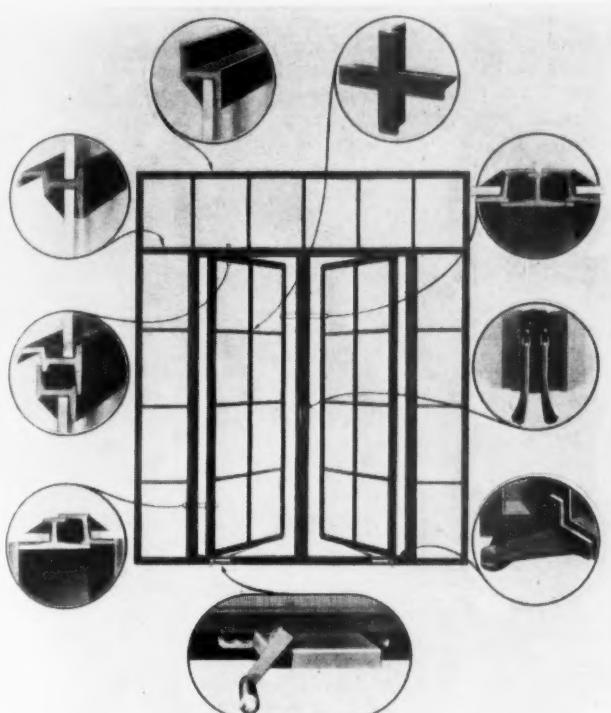


ATTRACTIVE corner window treatment with Adams & Westlake aluminum sash. Because of narrow metal frames, cross bars, and mullions, these windows give from twelve to thirty per cent more light than similar units of other, bulkier materials. Their use is suggested in kitchens and other rooms where maximum illumination is especially desirable.

More for the Money Today in Truscon Windows

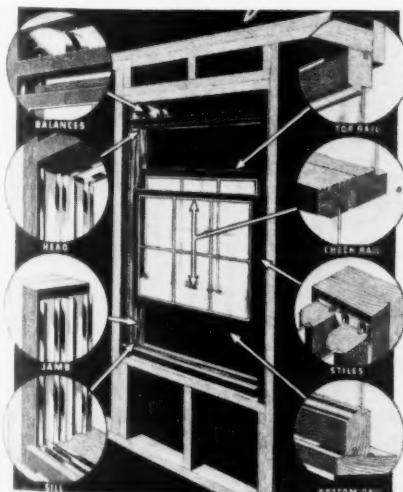
SEVEN points of advantage characterize and distinguish the Truscon steel casement window of today from its 1926 predecessor. Today's window has more attractive and more practical hardware; casement ventilators can be locked or unlocked without opening screen frame; extension type friction hinges hold ventilator in any desired position and permit cleaning from inside the room; worm and gear underscreen operators do not extend beyond sill into room; casements can be furnished with alternate vertical muntins eliminated; they are equipped with fixed, side-hinge, roll-up, or wicket-type screens; standardization of a greater number of types permits more units to be carried in warehouse stock, thereby assuring quicker shipment of types which are in constant demand.

SAME PRICE IN '26, but minus the seven advantages available today. Screens were of the side-hinged type, which made it necessary to open the screen before the window could be opened or shut. The underscreen operator used on the 1937 window was unknown. Insulating storm windows, so necessary today for summer and winter air conditioning, were not available. Hinges were of a non-friction type. Windows could not be washed from the inside unless extension hinges (optionally purchased) were sold and installed with the windows. For a given standard opening, comparative cost of the 1926 and 1937 type is almost identical, but the latter includes all of the advantages listed on the left. Thus the home buyer today gets a great deal more for his money, dollar for dollar, than in 1926.



Wood Windows Improved

IN former years the framing of a wood window was a long, time-consuming job. Among the many improvements developed during the past decade one of the most important is factory fabrication of fitted windows that can be installed quickly and satisfactorily.



EIGHT of the many advantages of N. S. W. (Non-Stick Windows) are illustrated in details at the left.

UNKNOWN TEN YEARS AGO, this factory fabricated N. S. W. (Non-Stick Window) has introduced further advantages. It is a guaranteed non-stick, double-hung, wood window, without sash weights. It practically overcomes air filtration through tight fit of jamb and stud, and the use of a metal jamb with weather-strip beads. Each sash is balanced by a spring balance that is guaranteed for life of the building, and holds sash stationary at any desired point. Spring balances are used to eliminate weights pockets, and to permit use of narrow mullions.

Among many advantages claimed for this window, it allows the contractor to purchase complete window units from a single source, and reduces labor cost of installation. It makes wall insulation more effective through elimination of uninsulated gaps. The windows can be installed at any stage of construction and remain operative. Saving is effected in solid wall construction on stone sill and steel lintels, as mullions are smaller and lintels need not span weight boxes. In frame or veneer construction, the 2 x 4 jambs act as cripple studs, a saving of at least 50c per opening in materials and labor. Plasterer has a solid base on which to work at openings. Estimated saving of 20c per opening on painting, as jambs need not be painted or oiled. Square frame saves time in applying trim, especially mitered joints. Trim carpenter need not gauge inside stops, as they are gauged by metal flange of jamb. A major selling point is that a salesman can demonstrate operation of window.

Improved Efficiency, Durability, Styling, Higher Values

Rezo Doors Give More for Less

BENEATH the three-ply panel flush face of the Paine Rezo Door shown below is an interlaced mesh core. This patented core is stronger than a solidly built door, and one-third less in weight. It will not shrink, swell, or sag. Air channels throughout the core permits continuous air circulation and prevent absorption of moisture. Each door is individually packed in a dust-proof carton, and is delivered to the job sanded, ready for the painter.

Each door is trimmed to size and can be hung and finished at low cost. The flush surface treatment is designed for the present architectural trend, and affords unlimited decorative possibilities. The original cost is low, because these doors are made in a special line-production factory, with precision machines. The Rezo door is regarded as the outstanding development and advance in door construction in recent years. It is described as a better door for less money.

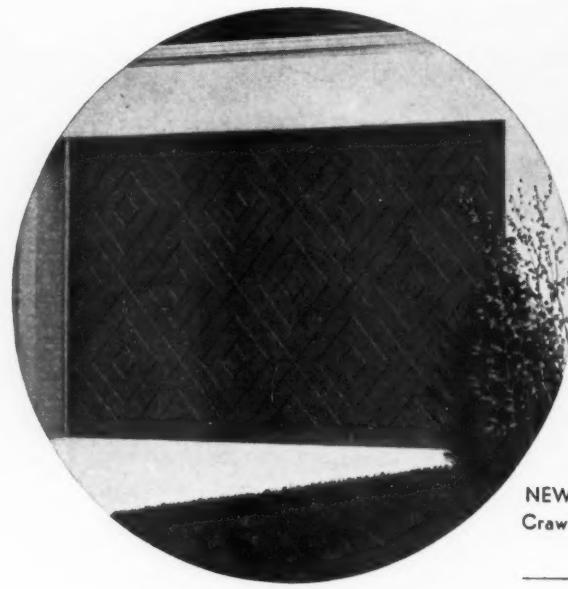


THE Rezo flush door has a patented inner core.

OLD IDEAS as to door construction and styling have changed. The illustration at the lower right shows an ordinary panel type door, such as can be found in millions of buildings today. A door of this type is not trimmed to size when delivered to the job, and requires expensive carpenter labor to fit and hang. The recessed panels serve as dust-catchers, are not easily cleaned, and require 50 per cent more painting expense to produce a finish equivalent to the flush type door shown on the left. The old type of door is delivered to the job unwrapped, exposed to the weather and to handling. By the time it is installed the surface may carry finger marks that have to be worked out before it can be finished. It also may have raised grain, due to contact with moisture. A decided contrast is seen in the modern, sanitary, light-weight Rezo door. It is delivered to the job individually packed, and sanded, ready for the painter.



THE architectural trend is away from panel doors.



NEW Rezo Garage Door, as furnished by Crawford Door Co.

Garage Doors Are Lighter, Stronger, More Ornamental

THE Rezo construction principle also has been used to improve garage doors. It has an interesting history. The Crawford Rezo flush type garage door is the result of an idea conceived by French engineers after years of effort to produce a satisfactory door of minimum weight for use in ships. The interlocking wood core, described above, is equipped with ventilation channels and notched air vents, permitting air to circulate throughout the door after the flush plywood faces have been applied. This makes a door that for the first time in history, acclimates itself to varying conditions of temperature and humidity, making it stable under any influence of moisture absorption.

The construction principle used in this door makes use of the inherent strength of interlocking girders, universally applied in steel construction. It capitalizes such factors as the greater rigidity of strips laid on edge, compared with those laid flat. Because of the way in which the core is constructed, the door will not shrink, swell, sag, or warp. It is described as an "air-conditioned sound-resisting door, with insulation value."

The flush surface of the Crawford Rezo door lends itself to wide variation of design. The laminated waterproof faces will take any one of many decorative treatments, and are available in various woods, such as oak, cypress, chestnut, brown ash, and rare woods. The surfaces also can be V-grooved to produce interesting designs such as vertical plank effects, herringbone, diamond, horizontal patterns, and any desired special effects in keeping with present architectural trends. Reduced weight, made possible by the core, makes the doors easy to open and close.

"Wood Life" Preserver Improved

IN 1929 the name "Wood Life" had not been coined for waterproof solutions made by the Protection Products Manufacturing Co. The solutions were used in treating wood, but sometimes made finishing with paint, varnish, and enamel a difficult and sometimes risky proceeding. They could not be used at temperatures below 60°, and the toxics used in that period were not so enduring as present ones.

Several outstanding improvements have been made in "Wood Life" products of 1937. The company's waterproof preserver solution has been changed so that it can be used at low temperatures, and at the same time it becomes a prime base for paint. The toxic, pentachlorophenol, used in the 1937 solutions, has been recognized by prominent research bureaus during the past twelve months. Its advantages over the toxics formerly used favor increased use of wood.

"Wood Life" products are used in four types of treatment for wood. Each is applied to prevent swelling, shrinking, warping, raised grain, checking, and decay, with certain special applications. The waterproof preserver is used on sash, frames, doors, drawers, moulding, siding, plywood. A toxic preserver prevents decay and blue stain organisms. The two products are combined in "Wood Life" toxic waterproof preserver, used to prevent all the evils of moisture absorption or decay of any kind. The same treatments are combined in a binder for aluminum paste.

A Product of the Automotive Age

THE overhead door is a contribution to modern housing that is definitely a product of the automotive age. Like every great industry, it is based on a definite need, the need for a door that would close large openings, such as a garage, that would occupy no valuable space, and would yet close tightly, open freely and, above all, operate without constant care, attention and replacement.

The 1937 Overhead door (below) made by the Overhead Door Corp., of Hartford City, Ind., still operates on this original basic principle. But no product better illustrates the progress that has been made in recent years. Refinements have been made in every detail of construction which produce a longer lived, easier acting and more perfect door.

The outstanding recent improvement in the original Overhead door is the use of Salt Spray steel for all metal parts, that eliminates rust and deterioration. This noteworthy development not only insures permanency and long life but insures the original ease of action that obtains in a new door.

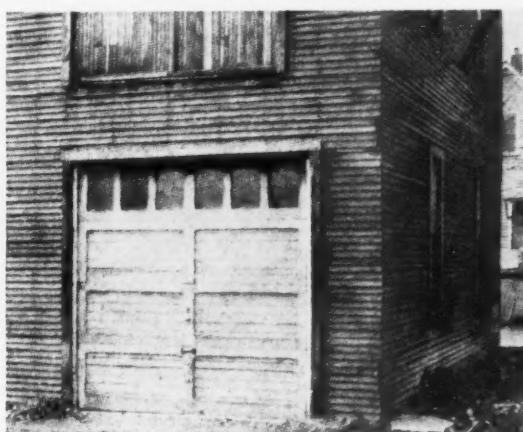
Like many other products of the building industry, no additional charge has been made for the improvements in the Overhead door. The consumer profits by progress.



THE ORIGINAL OVERHEAD DOOR gave birth to a new idea in closing openings—a door tight at top, bottom and sides that occupied no valuable space and that could be made to fit any opening.

Construction of the original Overhead door was limited to the materials at hand. Strap hinges, castings, studs with cast rollers, angle-iron track and sections of batten covered frames formed a door that demonstrated a new idea. But this product has been greatly improved in the past decade.

The modern Overhead door is strong, tight fitting, durable and easy to operate. What is more, due to the adoption of Salt Spray steel for all metal parts, it will stay good looking and will continue to operate smoothly. Wood panel sections are milled of Sitka Spruce, 3-ply panel, with optional glass arrangement. Stock doors can be made to conform with any type of home construction. This modern 1937 Overhead door is easy to install, eliminates the inconveniences that used to be caused by snow and ice, saves valuable space, fits absolutely tight. It is a good example of more house for the money equipment that is giving high value to the 1937 home.

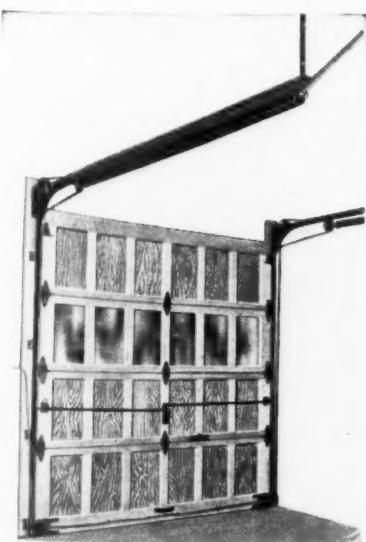


Ro-Way Doors Priced 16% Lower Today Than in 1929

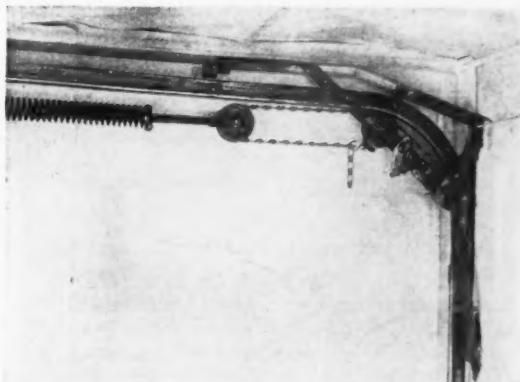
SIMPLICITY of design is the keynote of the 1937 Ro-Way door illustrated below, which is a striking contrast to the more complicated mechanism required in the model of 1929, illustrated at right. The number of working parts has been reduced to a minimum, thus assuring long, carefree operation. The Ro-Way doors travel on ball bearing track rollers, and the lifting cables or chains pass over double ball bearing pulleys.

Counterbalance springs keep the door in perfect balance at all positions.

Despite the improvements that give a stronger, easier working, better looking, more durable door, the 1937 model is priced 16% lower than that of 1929. Features of the 1937 model that provide extra value include: extra large and heavy corner brackets; door cannot jump track; equipment is easily and inexpensively installed.



1929 MODEL



1937 MODEL

Improved Efficiency, Durability, Styling, Higher Values

Insulation—Basic Advance in Value

PROBABLY no home improvement has had a more far-reaching effect or caught the imagination of the public more than insulation. Does the average uninformed prospective buyer who complains that "homes cost too much" realize what basic improvements in insulation and insulating methods have taken place in the last decade? He probably does not. It is the job of the building industry to point out that modern insulation has contributed an enormous amount to the high value and low maintenance cost of the 1937 home.

A house that is truly warm in winter and cool in summer—and will stay that way—has been the dream of the ages. In 1926

insulation was a comparatively young industry. It had much to learn. In the years that have followed tremendous new developments have taken place. To mention only a few: moisture and condensation problems have been vigorously attacked and solved; installation methods have been simplified and labor costs greatly reduced; structure and contents have been stabilized and standardized; permanence and long life have been achieved. The cost is considerably less than in 1926.

In this field scientific research backed by practical experience has contributed much to high home value.



1937

SUPER batts of full wall thickness enclosed in waterproof paper assure a more uniform, effective job. Installation costs are cut 50%.



1929

WHILE the basic material, rock wool, was excellent, application by hand was more expensive and careless workmanship made possible uneven distribution of the insulation.

Easier to Install

LABOR COSTS are cut 50% in the installation of these factory-made square-cut super batts covering 5 square feet, as compared with the hand packing of rock wool used in 1929. These modern Super-Batts, a product of Johns-Manville, assure a full wall thickness of insulation of uniform density. The batts are now faced with a heavy waterproof paper which protects them against moisture from the drying out of plaster. The paper also makes the batt easy to handle, holds it permanently in place. A tacking flange holds the batt in place between studs or rafters, and provides further protection against infiltration of air.

The current price of the 1937 product, in spite of the large improvement since 1929, is less per square foot of surface to be insulated. The applied cost is much lower due to the saving in labor.

LOOSE ROCK WOOL IN 1929 is illustrated in the picture above—the product itself cost more than the improved type illustrated at left, and the installation cost was 50% more. The basic material, rock wool, provided an excellent barrier to heat and cold, provided a fireproof, permanent protection. However, application of rock wool by hand packed methods was more susceptible to uneven distribution and thin spots due to careless workmanship. It was a slow, expensive and unpleasant job. The product of today has a higher insulating quality, is more uniform, is vastly easier to install, as a result of the super-batt construction. In addition the technical improvements in making the basic product water repellent, and in enclosing it in waterproof paper to keep out plaster moisture and condensation is a forward step of great importance.

Lower Handling Costs

RESEARCH laboratories of great industries have been busy perfecting new and improved forms of insulation to add to the high value of the 1937 home. One of these is the Kimberly-Clark Corp., which for many years has been conducting research in the manufacture of wood fibre products. Kimbatts, a fluffy, soft wood fibre insulation in batt form, was brought out last year. The batts are easy to install, have a high insulating quality obtained from many layers of heat stoppers. The product is treated to resist fire, vermin, water. A still newer product is Kimsul, a light-weight blanket-type insulation. The blankets are tacked at the top at the header, pulled down like a shade and fluffed out.

NOTHING LIKE THIS IN 1926. The forward progress of the insulation industry is well illustrated by the fact that the new products of the Kimberly-Clark Corp.—Kimbatts and Kimsul—are the results of modern scientific research and were not available in 1926 or '29. They show that the building industry

is constantly bringing out new and improved developments for the home that give more comfort and efficiency, and at the same time provide these higher values at lower cost. Kimsul, the blanket type, cuts insulation and handling costs to a new low. An ingenious manufacturing process makes possible a compressed product that is greatly expanded when installed. Twenty-four full sized blankets are packed in a container only 16 x 20 x 24 inches. At the time of installation, these 24 blankets are expanded to provide 250 square feet of insulation.

Modern Research Helps

Great modern industries contribute the knowledge of their research laboratories to the modern home. They continually add value at lower cost.



Fireproof Insulating Wool— A Modern Product

ANOTHER product which illustrates how the machine age industries are contributing scientific products to the modern home is insulating wool, an extremely light, fluffy insulation made of pure silica. As modern as the latest airplane, this type of insulation is subject to rigid manufacturing control so that it is uniform and has a high insulating efficiency.

Marketed by the U. S. Gypsum Co., Red Top insulating wool is made in full-thick batts, in junior batts, and in a strip wool form. The snowy, long, white silica fibres are formed into batts, each of which has a heavy black waterproof paper backing with nailing flanges at the edge. The paper backing holds the product in shape and in place, and is a further protection against wind infiltration and moisture.

The strip wool type illustrated at left is delivered as a continuous four-inch thick 15-inch wide blanket 9 feet long. The strip or blanket, with its heavy paper backing, is quickly and easily tucked into place between studs and rafters held in place with the $\frac{1}{4}$ -inch nailing flanges at edge.

As an illustration of the greater value provided in the 1937 home, this form of fireproof insulating wool, a protection against heat and cold, is a particularly good example. The product is clean, odorless and, like the silica from which it is made, is not affected by time or the elements.

Big Sheets Save Time, Labor

LOWER costs in home construction are achieved through the use of big sheets of Homasote weatherproofed insulating and building board made by the Homasote Co., Trenton, N.J. This firm has perfected a precision-built method of home construction using sheets up to 8 x 14 feet in size, which save 30 to 40% in wall and partition construction costs. The development of precision-built framing methods makes an additional saving, and the house so built is most economical to heat. The use of Homasote insulating and building boards eliminates moisture troubles from plastering, and provides a doubly insulated, economical home.



SHOWING ERECTION of a small home by precision-built methods, using Homasote board in sheets up to 8 x 14 feet.

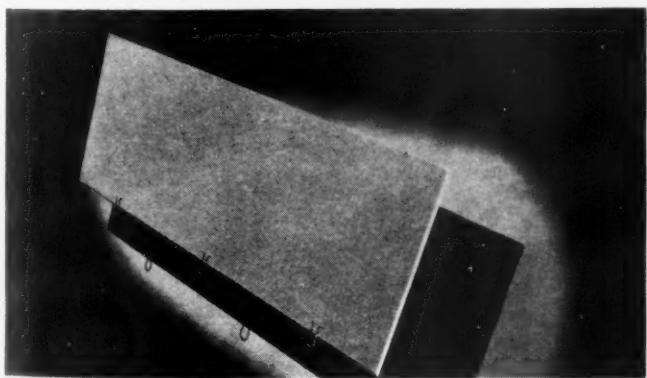
Meets New Moisture Conditions

NEW developments and improvements in home equipment are constantly creating new conditions. Air conditioning is one of these, so that insulation must be designed to meet the problems this new equipment creates. The Wood Conversion Co., makers of Balsam-Wood have double sealed their insulating product to keep out moisture. Balsam-Wood is a blanket type insulation that comes in rolls. It consists of a highly efficient wood fibre enclosed in double sealed waterproof liners asphalted on both

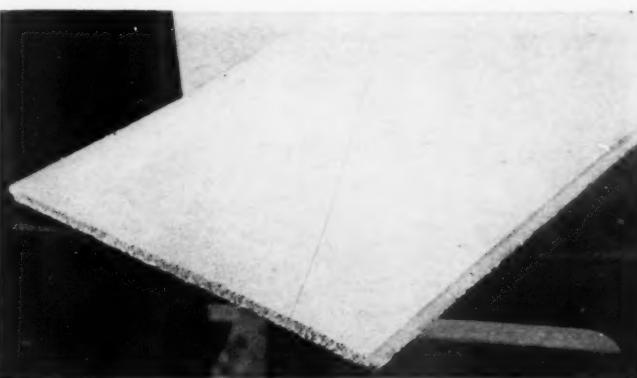
sides. The blanket is held in place between the studs by means of flanges, and sets up an air-tight, wind-proof barrier. This insulation is treated with a positive, enduring chemical that makes it vermin-proof and rot-proof. In addition, it is fire-resistant and moisture-proof.

One of the recent marked improvements has been the use of a heavier type Kraft paper liner saturated with asphalt, adding to its protection against infiltration of moisture.

Improved Lok-Joint Lath



ILLUSTRATED ABOVE is the improved 1937 Lok-Joint Lath insulating plaster base manufactured by the Insulite Co. of Minneapolis. This is one of the products that is contributing to the high value of the 1937 home. As contrasted with the Insulite plaster base of 1926 illustrated opposite, this product shows many improvements. The reinforced joints or "locks" provide a continuous and unified base for application of plaster. The locks act as a ground, assuring a minimum thickness. There is full thickness of insulation at the joint.



IN 1926 the Insulite plaster base, as illustrated above, had not been perfected to its present state of efficiency. One of the far-reaching improvements was the adoption of the reinforced joints with a metal lock, providing a continuous and unified base for plaster. Despite the improved quality of the 1937 product, it retails today at \$6.00 per thousand less than it did in 1926 and \$4.00 less per thousand feet than in 1929. The new product is quickly and easily applied and is an important cost saver because it can be installed by the contractor's regular workmen.

Improved Efficiency, Durability, Styling, Higher Values

Celotex Moisture-Proofed and Reduced 8% in Price

CONTRIBUTING their share to the giving of "more house for the money," the manufacturers of Celotex have adopted far-reaching changes to improve and perfect their product and add to the extensiveness and versatility of the line.

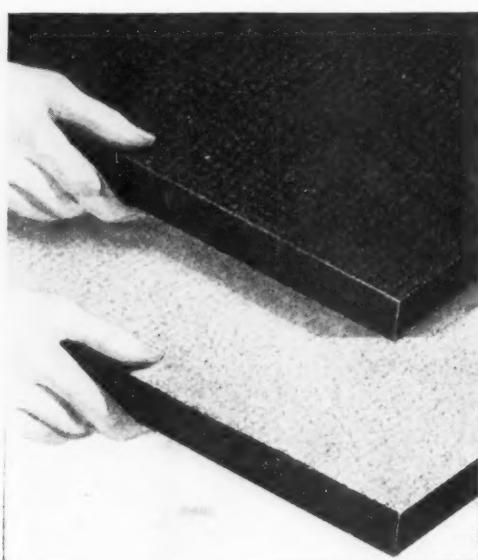
In 1929, the firm manufactured Celotex building board, which was used as a sheathing. This board was primarily manufactured and used in the $\frac{1}{2}$ -inch thickness. Later it was manufactured in $\frac{25}{32}$ of an inch thickness—the same thickness as regular sheathing. Figured on this basis, the price in 1929 was 8% higher to the lumber dealer than the company's improved new Celotex Vapor-seal sheathing marketed today.

The new and improved Celotex Vapor-seal sheathing has greater rigidity due to its laminated construction, and offers additional bracing strength over the original board. The new product is coated on both sides and all edges with especially

prepared asphalt which protects the insulation against penetration of moisture. In addition, one side is coated with a shiny aluminum compound which offers additional protection.

Various other improvements have been made to facilitate handling and simplify installation. The boards are now marked with guide lines to indicate where they should be nailed, so as to hit the studs.

Similar and equally important changes have taken place in the Celotex interior finish material. This is now produced in several different colors and surface treatments. It has greater structural strength, a harder and more durable wearing surface. Methods of treating the joints with Swedish putty and tape furnish a smooth wall for wallpapering, and eliminate the necessity for battens. If joint treatments are desired, many attractive new mouldings are now available.



TODAY'S product — new Vapor-Seal Celotex sheathing coated on sides and edges with asphalt preparation. Also has reflective aluminum coat.



LOW MAINTENANCE COST and long life give added value to this home with a copper roof of Kenmar shingles made by the New Haven Copper Co. This quality product, not manufactured in 1926, gives fire and lightning protection, strength with extreme lightness of weight, permanent weather-tightness.

Important Advance in Stained Shingle Manufacture

IN practically every division of construction the new and improved products are contributing higher values to the modern home. Even such well standardized, widely used products as wood shingles have become a subject of scientific research followed by scientific improvements of great importance.

The controlled machine staining of high grade western red cedar shingles is one of the important advances in stained shingle manufacture that has taken place in the past decade. Perfected after long research, especially designed machines now insure constant, invariable control of every step of shingle staining, insuring a uniformity of color, coverage and finish that was impossible and unheard of a decade ago.

This scientifically controlled staining process, illustrated in

the modern machine shown below, is used by the Stained Shingle Division of the Weyerhaeuser Sales Co. in the manufacture of Edham Stained Shingles. This improved shingle has a reliability, uniformity and a long life that represent a most worthwhile contribution to the high value of the 1937 home. Variations in draining, oil penetration, pigment coverage and drying time common to the shingle that used to be stained by the "dunking" process are no longer possible.

The individual staining of Edham shingles is done under scientific conditions which include temperature and moisture content control, laboratory supervision of stain and formulas, thorough supervision of coverage, brushing and drying.

Although the Edham Stained Shingles have been scientifically improved with the important advances mentioned, in uniformity, of quality, finish and durability, cost is less than that of the hand dunked shingles for the decade ending in 1929.



THE 1937 Edham stained shingle is treated in the machine shown at left under highly scientifically controlled conditions.

IN THE 1926-29 era and before, shingles were "dunked" by hand in the fashion illustrated at right. It was impossible to get a scientific uniformity in this type of operation, and it has now been replaced with the highly developed machine method illustrated at left. The 1937 shingle is still priced less than the 1929 one.



Surveying a Decade of Progress in Building Products

Roofings and Shingles—Longer Life

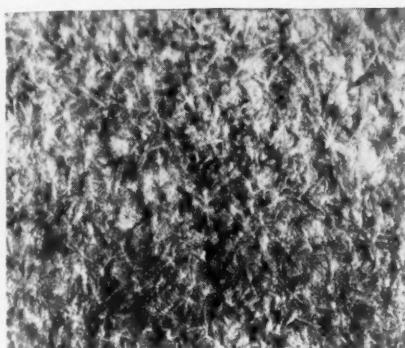
WHAT sort of a roof does the home owner of 1937 get, as compared with 1926-29? This is an important question, as a house is no better than its roof. The answer is clearly shown by the *American Builder* survey. The home owner of today is getting a roof of vastly improved quality, durability and length of life at a cost considerably under the 1926-29 era. In addition, a host of new improvements in roofings and shingles has been made in the important direction of beauty and architectural merit. Many new colors and effects are available and progress in this line has been particularly noteworthy.

It is difficult to mention in a brief space all the progress in roofing and shingles. Starting out with wood shingles, notable advances have been made in the standardization and maintenance of high quality. The grading and marking of shingles has given

a new reliability and desirability. In the asphalt shingle field, progress has been great. Heavier thick butt shingles have been produced in a range of colors and textures unheard of. Surface treatments have been adopted which give longer life. In general, prices have been reduced, and at present they are considerably under the 1926 level.

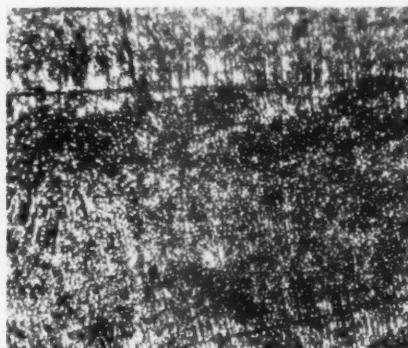
Spectacular improvements in asbestos cement shingles have been made. Improved textured effects, thicker butts and wood grain effects have brought a new beauty to this important field and are giving new architectural quality. Advances in metals, copper and steel roofing materials have been made, greatly increasing the use of these types. Slate has been improved in uniformity and quality, with a large reduction in price from the 1926-29 level.

Paint Sticks to These Galvanized Sheets



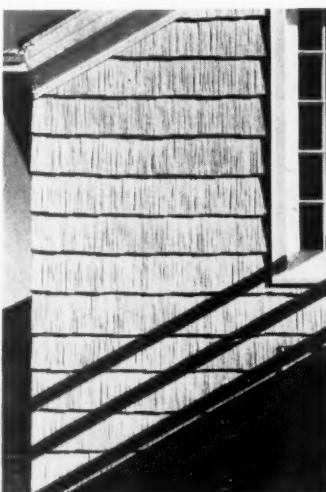
1937 PAINTGRIP galvanized sheet, which insures satisfactory adhesion of paint. The rough texture which holds the paint is clearly indicated in the 40X-enlargement.

ENLARGEMENT of the surface of a galvanized metal sheet which has not been treated to Paintgrip as has the new product illustrated at left.



THE 40X-enlargement of the surface of Armco galvanized Paintgrip sheets illustrated above shows the latest development and improvement in making galvanized sheet metal paintable. A special mill treatment provides a surface that can be painted immediately, with absolute assurance that the paint will stick. The cost is only $\frac{1}{2}$ cent per pound more than the current price of ordinary galvanized sheets, which is exactly the same as the current price of this same product in 1926-29.

UNTIL THE DEVELOPMENT of the new Armco Paintgrip illustrated at left, which took place last year, it was not possible to purchase galvanized sheet metal with a full weight protective zinc coating that could be painted satisfactorily and successfully. The 40X-enlargement above shows the slick, smooth surface of a newly galvanized sheet which was the best available in 1926 or 1929. To be painted, this surface had to be washed or etched with acid, or permitted to weather for several months.



1937—Textured Siding Shingle

AN outstanding product contributing to better home value and beauty is the Johns-Manville Shake Textured Asbestos Siding Shingle illustrated at left. This is a popular 1937 product. Made of asbestos and cement, it has durability and fireproofness associated with these products. In addition it faithfully reproduces the texture and grain of fine hand-split shingles.

This shingle has a tapered thickness, with a butt approximately $\frac{5}{16}$ inch thick, and a staggered edge which produces a pleasing shadow line.

The 1937 line of asbestos siding also includes Cedargrain texture siding shingles and Asbestos Clapboards. These products make it possible for the owner of a shingle or clapboard house to have all the charm and texture of finest wood, plus the quality of being fireproof, rot-proof, and termite-proof.

In spite of these improvements in appearance and quality, the J-M Asbestos Siding Shingles today cost approximately 10% less than the Hexagonal Asbestos Roofing Shingles used for side walls in 1929, illustrated opposite.



1929—The Hexagonal Type

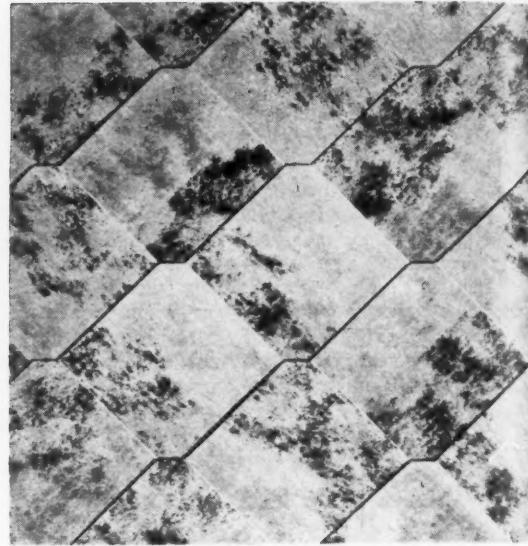
ILLUSTRATED ABOVE is the Johns-Manville hexagonal style roofing shingle used on side walls in 1929. At that time asbestos shingles had not been developed for use on the side walls of a house. Consequently, on shingle or clapboard houses it was impossible for the owner to have the protection afforded by an asbestos product, except by using a roofing shingle on the side walls.

The hexagonal shingle did not lend itself well to side wall application as it lacks the necessary surface texture and horizontal shadow line to give it a sufficient architectural appeal. In recent years the Johns-Manville Corp. has perfected its new textured asbestos siding shingle of the type illustrated in the column at left. These have a thick butt, beautiful texture and high architectural quality.



Now

Then



More Style at 25% Less Cost

A FINE example of the way in which asbestos shingles have been developed in style, texture and color is illustrated in the pictures above. At left is the 1937 Keasbey & Mattison No. 57 "Century" Asbestos Broadsiding—a vast improvement.

There are 57 of these new type siding shingles to one square (100 square feet) and the square weighs approximately 192 pounds. Thus there is an appreciable saving in weight over the hexagonal shingle shown in the opposite column.

Due to the improved design and larger unit size, these new siding shingles are easily applied, and a house can be covered more quickly and at 25% less cost than was possible with the old No. 4 hexagonal shingles of 1926-29.

IN THE 1926-29 ERA, the K&M No. 4 hexagonal asbestos siding shingle, illustrated above, was considered to be a most satisfactory asbestos shingle for use on low cost homes, factories, barns and other structures of this type. It had a wide and extensive use.

One square (100 square feet) contains 86 of these shingles and weighs 258 pounds. Due to their design and method of application, the services of a fairly skillful roofer are required to apply them correctly.

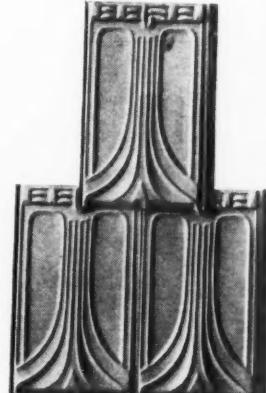
In contrast with this type, there is the perfected asbestos Broadsiding illustrated in the column at left, which has a heavy shadow line, wavy butts and a textured surface.



Interlocking Shingle

IN 1937 this improved interlocking metal shingle manufactured by the Edwards Mfg. Co. sets a high standard for the high value modern home. It represents an advance both in design and interlocking feature. The cost today is approximately \$6.50 per square, or roughly 13 1/4% less than the price 11 years ago. It is not only improved as to quality but has been modernly styled.

IN 1926 the ornate metal shingle at right sold at around \$7.50 per square—considerably more than the modern design at left. The present trend is toward simple, modern effects so that the old shingle has been restyled. The improved metal shingle of today gives a high value at low cost because it gives years of service, and the patented interlocking side seam automatically provides for expansion and prevents buckling.



High Quality, Uniform Red Cedar Shingles

A NOTABLE advance in the quality and uniformity of red cedar shingles has been achieved since 1926 through the work of the Red Cedar Shingle Bureau, which has made the trade mark "Certigrade" a recognized standard.

Lack of uniformity and the use of confusing and frequently misleading labels and high sounding names used to be a common condition that was harmful to the home owner, the lumber dealer, the builder, and to the manufacturers themselves. Finally a group of several hundred mills got together and agreed to set up high standards and uniform quality for their products.

Marketed under three principal grades, the Certigrade shingle is identified by a label on every bundle, stating that it is manufactured in accordance with the standards set up by the Red Cedar Shingle Bureau. The Bureau certifies that the shingles so identified have been inspected and guaranteed as to grade and quality.

A corps of skilled, trained inspectors make frequent calls at irregular intervals to the mills, select bundles at random and

survey them to determine adherence to the grading rules. As a result of this rigorous inspection service, the average Certigrade bundle averages considerably above minimum requirements.

The Certigrade label is copyrighted and can be used only by the members of the Red Cedar Shingle Bureau who agree to live up to the specifications. Grade No. 1 is guaranteed 100% "edge-grain," 100% all clear, 100% heartwood. The shingles are further classified into grades Nos. 2 and 3, and into the 16, 18 and 24-inch lengths. Grading rules are rigorous and exacting, resulting in a uniformity and quality that were not possible a decade ago.

Another service rendered by the Red Cedar Shingle Bureau has been the publishing of roof construction details showing the proper use of shingles, both in new work and in the over-roofing of old shingle roofs. Like any good building product, shingles must be properly applied, and the wide publication and dissemination of a few sound principles of good workmanship have resulted in greatly improving the quality of red cedar shingle roofs.

1937
Thick
Butt1926
Plain
Surface

Heavier, Thick Butt Shingles

ILLUSTRATED at left above is the Bird Weather-Tex 3-in-1 shingle, one of the typical 1937 products selected from the Bird & Son line illustrating the progress that has been made in the asphalt shingle and roofing industry since 1926. This particular product has two layers of coating and two layers of mineral granules on the exposed area. It is made in a variety of colors and blends, weighs 210 pounds and has a Weather-Tex surface embossing. Despite the progress it represents over 1926, it is priced 3% below the 1926 product.

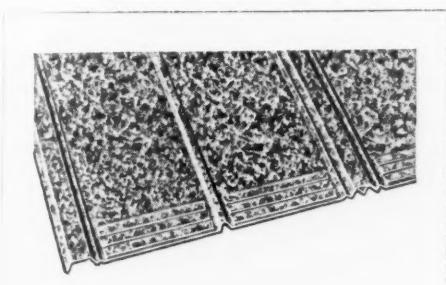
An analysis of the Bird line shows in a striking way the price comparison with 1926. The Lock Butt shingles are 88% of 1926 price, 10-inch American strip shingles 97%, American hexagonal 83%, 75 pound mineral surface 89%, 90-pound mineral surface 84%, 65-pound paroid roofing 62%. But more important than the price consideration alone is the advance in the quality and versatility of the line. In 1926 there was a choice of only four colors. In 1937 there are 15 colors or color combinations, 9 of which are a blend.

THE 1926 DOUBLE TWIN SHINGLE illustrated at right above cost more and lacked many of the improvements so popular in the 1937 Weather-Tex thick butt shingle illustrated at left. The 1926 product was made in three plain colors and one blend, had a plain surface, lacked "shadow lines" created by the thick butt provided in 1937.

Since 1926 asphalt shingles have taken long strides away from the limitations of the dull mechanical appearance thought necessary at that time. Today there is a wide selection of color combinations as well as the Weather-Tex graining effect.

Similar improvements are shown in the Bird line of mineral-surfaced roll roofing. In 1926 only three plain colors were offered, while in 1937 there are five; in addition, a blend that was not possible in 1926. Further economies result from the fact that the same price prevails for a truck load as for a rail carload shipment.

In addition to price reductions, the 1937 shingles have a colorful beauty and an adaptability to architectural design that offers some marked advances over the 1926 product.



NEW triple drain channel roofing eliminates leaks from driving rains, syphonage or seepage.

Triple Drain Steel Roofing

ONE of the new products which was not on the market in 1926 but represents "more house for the money" today is the new Triple Drain Channel Roofing manufactured by the Republic Steel Corp. This product uses four ridges and three valleys in each channel unit, thus providing three drainage channels instead of the conventional one or two. Driving rain, syphonage or seepage are eliminated.

For convenience, the proper area for nailing triple drain roofing is indicated clearly by blue lines on each sheet. Triple drain is available in three types of metal—steel, copper-bearing steel, and rust-resisting Toncan Iron. It is furnished in 26, 28 or 29 gauge. Lengths range from 5 to 12 feet; covering width of 24 inches.

The addition of triple drain rounds out Republic's line of roofing products, which now includes: corrugated sheets, pressed standing seam, V-crimped, DCL roll and roll and cap roofing, super dry channel type, Super X shingles, plain and corrugated ridge roll, corrugated eave joint, gambrel joint and flashing and others.

More Home Value in Brick-Type Siding

ETERNIT Brick-Type Siding manufactured by the Ruberoid Co. of New York is one of the improved products of 1937 that is giving the home owner more value for his money than ever before. Made of Portland cement reinforced with asbestos fibres, this is a fireproof, permanent, rigid product closely resembling real "wire-cut" brick. The stony hardness of the product completes the effect of a rough brick texture. Individual bricks stand out from the mortar joints.

Used extensively for re-siding, this product is also desirable for new construction providing a low-cost, fireproof wall which eliminates upkeep cost and painting. The manufacturers estimate the cost at approximately one-half that of a real brick veneer.

The scientific laboratories of modern industry have here produced another contribution to longer life, lower upkeep, which means real economy in the long run, with a first low cost. The three bricks to each strip go on quickly and easily, providing a permanently weatherproof, fireproof house with low maintenance cost.

APPLYING 3-in-1
brick type
siding made of
Portland cement
reinforced with
asbestos fibres.



Improved Efficiency, Durability, Styling, Higher Values

Improved Paints More Economical

AN effective demonstration of the economy of good paint is provided in a page from the Pittsburgh Plate Glass Company's booklet "Better Paint, Better Painting." The page is reproduced herewith. It shows that although cheap paint may cost $\frac{1}{2}$ less per gallon, the total bill will be as high as though good paint were used. The average coverage of a gallon of high quality paint is 40 square yards (two coats). This means that $12\frac{1}{2}$ gallons

1st GRADE PAINT

The labor charge for applying Quality Paint is no more than the labor charge for applying Cheap Paint.

2 The average coverage of a gallon of Quality Paint is 40 square yards (two coats). For the average 500 square yard house this means ...

3 **QUALITY PAINT WILL LAST 5 YEARS BUT $2\frac{1}{2}$ YEARS IS ALL THAT YOU CAN EXPECT FROM CHEAP PAINT**

Only One Conclusion

Cheap Paint lasts only half as long, and on a 5 year basis costs about double the cost of Quality Paint

This conclusion is inescapable: To insure a proper paint job GOOD PAINT MUST BE SPECIFIED AND USED.

THE Pittsburgh Plate Glass Company prepared this visual demonstration that cheap paint does not pay.

Ions of quality paint will be used on an average size house. The average coverage of a gallon of cheap paint is 30 square yards. This means that $16\frac{2}{3}$ gallons will be required for the average house. Thus the saving in cost per gallon is lost. The copy points out further that quality paint will last 5 years, but that $2\frac{1}{2}$ years is all that one can expect from cheap paint. This means that cheap paint lasts only half as long, and on a 5-year basis costs about double the cost of quality paint.

The booklet also deals with surface inspection, chalking, various types of failures, proper surface preparation to make each paint job last longer. The company's research laboratories and test farms are pictured and described. Vitoloil, a specially processed vegetable oil, developed by Pittsburgh Laboratories, is presented pictorially to show the protective advantages of rounded brush marks that result on painted surfaces when Vitoloil is used.

Each type of paint failure is illustrated, described, and causes explained. Blistering, according to the manual, is caused by water seeping through the painted surface and pushing off the paint film. Checking can be prevented by allowing sufficient drying time between coats, and proper formulation of paint. Cracking results when paint dries too hard for conditions encountered on the job. Alligatoring is described as an advanced case of checking. Various causes of stains are described and explained.

White Lead in New Soft-Paste Form Saves Labor Costs

WHITE-LEAD paint, according to the National Lead Company, of New York City, not only costs less today than in 1926 or 1929, but is a considerably improved material.

White-lead-in-oil for many years has been popular with painters, builders, and owners, for outside use. It was customary for

the painter to mix the lead and oil on the job before it was applied. The heavy paste was worked up by hand with oil, gradually mixed and thinned until it reached the proper consistency. Anywhere from a half-hour to an hour was required to thin and mix 100 pounds of lead-and-oil from the original heavy paste.

Since 1933 white-lead-in-oil has been marketed in a new form. It is now delivered to the job as a soft paste, specially milled, and containing a small quantity of turpentine in addition to the customary quantity of linseed oil. This turpentine-softened paste produces a paint that has greater whiteness and covering power, and in addition the mixing operation that formerly required 30 to 60 minutes is reduced to 15 minutes.

The following price comparison was prepared by the National Lead Company for a large distributor in Norfolk, Va., where the local building exchange was gathering material for an advertising and educational campaign to counteract some of the statements that had been printed about "high building costs." The exchange sought comparative prices on principal building material lines for three representative years, and received the following data:

Table of Comparative Prices—
White Lead and Oil

	1937	1929	1926
Lead-in-oil (per hundred pounds)	\$13.00	\$13.75	\$14.50
	to		
	\$14.00		
Linseed oil (barrel price per gallon)	.80	.80	.85
	to	to	to
	.90	\$1.35	\$1.00
*White-lead paint (per gallon)	\$ 2.40	\$2.50	\$2.60
	to	to	
	2.90		2.70

*Figures based on standard formulas used for three-coat work on new wood outside.

The table shows that 1937 prices are consistently lower than either 1926 or 1929 figures.

Two-Coat System of Painting Found Satisfactory

COSTS of materials for both interior and exterior painting have been reduced in recent years, according to Devoe & Reynolds Co., New York City, and labor costs have been reduced in some cases where it now is practical to eliminate one coat that formerly was considered essential.

Prior to 1935, all reputable paint manufacturers recommended three coats for new exterior wood construction. A priming coat and two finishing coats generally were considered the absolute minimum for good work.

"Today," says Ivor Kenway, "the Devoe 2-Coat System has upset the old theory entirely. We now recommend the application of our new Undercoat, followed by one coat of Topcoat. Even on new work we ask people not to use a third coat. Thus material and labor for an entire coat of paint has been saved. The new system is so very much better than the old procedure that we are able to state in advertisements how, on the average, the new system outlasts the old-time conventional paint jobs two-to-one."

Great progress has been made with flat lithopone paints for interior walls and ceilings, and with decorative enamels for wood-work. These interior finishes now are more easily applied, and have so much more hiding power that in nearly all types of work, at least one coat can be saved from the usual procedure a few years ago. Products known as "one-coat enamels" are quite common today. They were unheard of a few years ago, and as a matter of fact the term would have been a misnomer at the time.

Paint manufacturers have devoted years of research to study of covering power, proper drying, and paint failures. Study of the penetration of oils into new wood, duplicating the application of a thin priming coat, revealed how much of the total oil is absorbed, and how much remained to form a bond with the next coat. Devoe chemists, after fifteen years of study, brought out an undercoat that did not immediately give up practically all of its oil. The principle of controlled penetration was developed, and a single undercoat served as both primer and first finish coat. In addition to their work on controlled penetration, the chemists were overcoming some causes of failures resulting in checking, cracking, peeling and fading.

Equipment Items in Mass Production

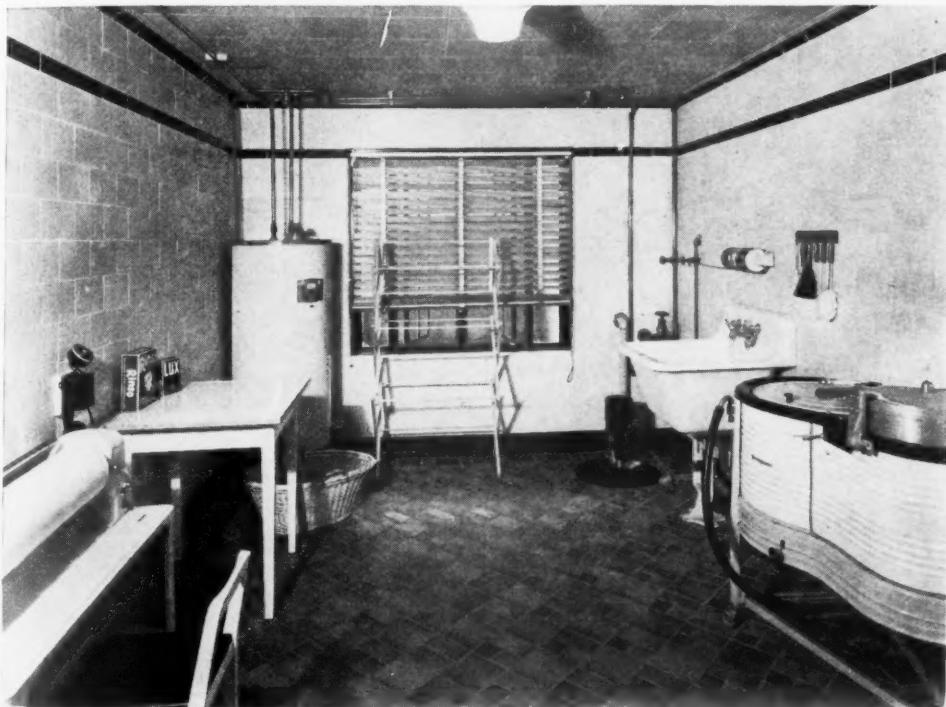
THE home building industry is frequently criticized as being lacking in up-to-dateness. People hold up the automobile industry as an example and say that the building industry lacks mass production methods. Such criticism ignores the fact that practically all the items that make up the modern home are a product of the modern machine age industry of steel and glass and automobiles.

Mass production methods have been, and are, constantly at work lowering costs and improving values. Since 1926 there has been a marked forward movement in this line, as more and more home products have been fabricated in factories, and the scope of mass production has increased. The lower costs produced this way are the only thing that make possible the great addition in equipment and materials in the modern home without any increase in cost over 1926.

In the field of such items of home equipment as water heaters, laundry equipment, washing machines and ironers, ranges, electric refrigerators, the benefits of mass production are increasingly apparent. A host of items of equipment of this type has been greatly reduced in price since 1926. The refrigerator has led the way with reductions in price of as high as 50%, with an increase in efficiency of 100%. Practically the same is true of electric washing machines, dishwashers, hot water heaters and other important items that make the modern home modern.

Accompanying the mass production methods has been new re-styling in beautiful colors and simple lines. Tremendous strides have been made since 1926 in the beautifying of home equipment.

One of the marked trends of the last few years in the building industry has been the entrance of some of the largest mass production industries into the making of materials and equipment.



THE 1937 laundry at left is typical of the improvement that has taken place in the past decade. It is a laundry in the Boardwalk Model Home of America at Atlantic City. Included in the equipment are the "Hotzone" automatic hot water heater by the Welsbach Co. of Gloucester City, N.J., a Westinghouse washer, dryer, and ironer, "Streamline" copper piping, Port Huron, Mich., electric sump pump, Penberthy Injector Co., Detroit, Celotex ceiling, aluminum Venetian blinds, J. G. Wilson Corp., New York City.



BELOW IS SEEN the basement bar and recreation room of the Atlantic City Model Home, with drum bar equipment by Ferguson Bros. Mfg. Co. of Hoboken, N.J. This makes an unusually attractive corner in a basement room.

A large number of automobile manufacturing firms have brought out heating and air conditioning equipment. One of the largest makers of automobile body plants has revolutionized the plumbing industry with a new line of streamlined products. One of the greatest new industries of all—the glass industry—is making a definite change in home building through the introduction of glass blocks, and its glass wool is widely used in insulation and acoustical materials.

There is a distinct tendency toward less work on the individual job, and more in the large mass production factories. Kitchen cabinets have gradually swung over into this class, as well as medicine cabinets and various other types of wall cabinets and built-in equipment. Instead of saying that the home industry does not have the benefits of mass production, it should be said that the home building industry is one of the greatest beneficiaries of mass production methods, as practically all great industries contribute their share to the improvements of the modern home—the improvements that give high value at reasonable cost.

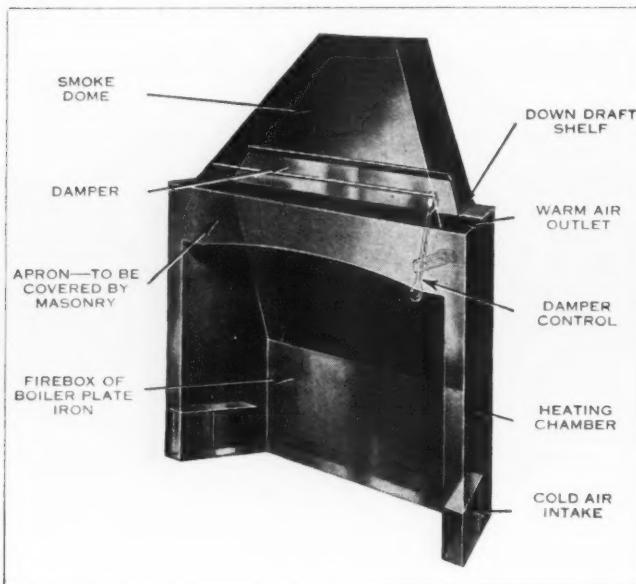
MASS PRODUCTION INDUSTRIES are contributing the mightiest resources of America to the modern American home. The glass, automotive, steel, cement and electrical industries alone contribute to and are benefitted greatly by home building. As sales of home equipment—such as refrigerators, washing machines, etc.—go up, the prices come down, so that, today, modern home equipment costs vastly less than it did in 1926.

Heatilator Now Costs 60 Per Cent Less

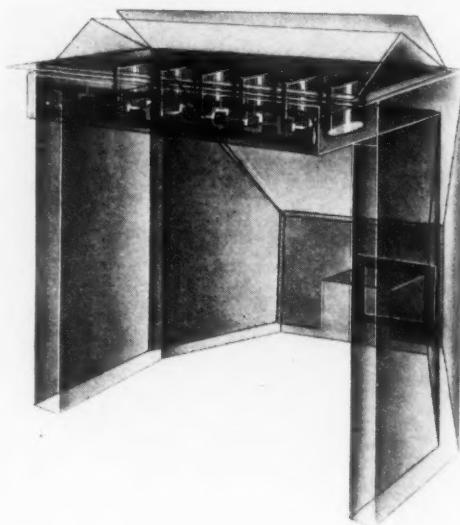
HEATILATOR Fireplaces were first marketed in 1927. The popular 34" size sold for \$58 in 1929. With improved design and construction the same size sells today for \$33.

The manufacturer, in developing the Heatilator, evidently proceeded on the theory that durability and trouble-free service would result from elimination of parts, joints, and welded seams. The present firebox, and all areas exposed to service, are of $\frac{3}{8}$ " boiler-plate iron. The fire-box is one piece of plate. All flues have been eliminated, with their joints and welds.

Operation of the unit is exactly like a warm air furnace. Air is taken from the room into the heating chamber, warmed and circulated back into the house. Addition of a smoke dome and apron in recent years, and furnishing of an insulating blanket of rock wool has made the unit more efficient and easier to install. Continuous advertising and promotion has gained general recognition and acceptance for the Heatilator line, and good will has resulted from recognition of regular distribution channel.



RIGHT: The 1927 unit that sold for \$58. Left: Same size that sells today for \$33.



Pullman Sash Balance Now Adjustable: Improved Product Available at No More Cost

THE outstanding improvement made in the Pullman Unit Sash Balance in the period from 1926 to 1937 is the addition of an adjusting device by which tension of the internal spring can be increased or decreased to secure perfect counter-balancing of the sash at all time. This adjustment is made with an ordinary screw driver, without removing balances from the window. In the old product, 1926 to 1929, no adjustment of the spring tension was possible after the balances were once assembled, and if they were incorrect with respect to weight-carrying capacity they had to be removed from the windows

at considerable expense, time, and effort, then returned to the factory so they could be replaced with balances of the proper strength to handle exact weight of the sash.

Accompanying illustrations show the new unit both assembled and with the housing removed, to reveal the interior construction, the spring, worm gear, and special disc that make adjustment possible.



HOUSING removed to show inner workings of Pullman Sash Balance.

The old product, 1926 to 1929, was lacquered black over a steel finish. The outside face plate was part of the balance frame, so that the entire outside housing had to be plated, or of solid material when special finishes were required. This condition involved an appreciable extra net cost per set of four balances, the equipment for one double-hung window.

Balances were attached to the sash with an ordinary screw, making it necessary to remove the window stops and sash if for any reason it was desired to take them out of the frame

for repairs or replacement, or in the event of incorrect specifications. The springs used were of the best known quality of the period, but were not comparable with present ones.

The new product of 1937 has an electro-galvanized, rust-resisting finish for all exposed parts. A separate outer faceplate now is provided. Any special finish required to match other hardware on the job now can be furnished at comparatively small extra cost per set of four. Use of a separate outer plate also permits mortising the pulley stile in the same manner as a lock. This makes a better fitting, air-tight installation. The faceplate now has square edges, rather than the rounded ones of the old faceplate, resulting in a neater and more attractive appearance.



PULLMAN unit, housing in place.

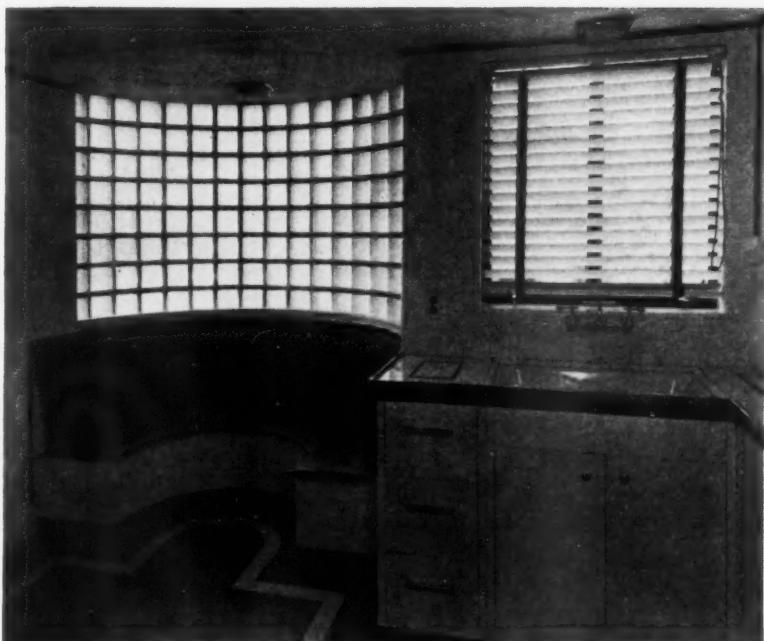
A new patented tape hook device for attaching the loop at the end of the tape to the sash, so that balances can be removed without taking off the stops or sash, accomplishes the operation in a jiffy. Re-installation, likewise can be completed quickly by reversing the process. A greatly improved spring material has been made available by improvements in the spring-making process. This development reduces possible spring breakage to a minimum. The breakage factor has been reduced to a negligible item as a result, and likewise possible loss of tension has been eliminated. Springs have been so much improved that it now is possible to insure durability with a guarantee against imperfect workmanship for the life of the building in which the balances are installed.

Despite the improvements that have been made, added manufacturing costs, increased cost of raw materials, and labor costs, selling prices on the new product are substantially the same as for the old one. No proportionate increase in price has been made to cover refinements and improvements.

Today's Kitchens Bring Delight to Housewives

BUILDERS who appreciate a woman's attitude as to the things she seeks in a new home have capitalized upon her interest in better kitchens. They are finding that this is a spot in which housewives desire pleasant surroundings, labor-saving convenience, better lighting and cheerful color. In today's homes much thought is being put into the planning of kitchens. The use of adjoining breakfast nooks and straight line efficiency where the equipment is grouped to save unnecessary motion, gives an appearance such as that seen at the right, in one of the recently completed houses of Levitt & Sons, New York.

The good news that builders can now give their prospects is that even with all the improvements in equipment, today's kitchens cost less. In going back through old kitchen records of 1929, and setting up a comparable kitchen of that date with a similar one of today, a manufacturer found that better cabinets, much more efficient equipment, better arrangement, better counter and sink materials and a great deal of improved efficiency in styling can be obtained today for approximately 22% less money than the kitchen of 1929.



Sinks Are Now Better, Cost Less, Than in 1929

THE 1937 stainless steel kitchen sink made by the Elkay Mfg. Co. and shown below is of better construction and materials than the 1929 model appearing at the right; however, the older style, minus recent value-giving improvements cost about 5% more.



THE 1926-29 **ELKAY SINK** in white metal or monel metal had a 25-gauge top built over a solid wood frame. All joints were soldered and the seams were visible. Although it offered resistance to stain and acid, denting, scratching and tarnishing, it was only half as thick as the 18-gauge stainless surface used in 1937 sinks. Now the reinforcing is 14-gauge steel backing, making a total metal thickness of over $\frac{1}{8}$ inch. Basins are butt welded flush to drainboards, ground smooth and polished, not soldered or lapped. They are integral with backs and sides, and there are now no seams or overlapping flanges, making them more sanitary and easier to keep clean.



Ventilating Fans Add Kitchen Comfort

THE 1937 model Victor In-Bilt ventilator illustrated at the left is attractively designed and finished. The interior grille harmonizes with any kitchen combination. Easy, automatic, fool-proof operation is featured. A telescopic sleeve allows for easy installation in walls of any thickness, an improvement over former models.



LEFT: 1937 Victor ventilator.

THE VICTOR ventilator of 1927 at the right was then considered a good value. It had a huge ornate grille, and a standard length wall box. To be used in homes of from \$10,000 up, it cost \$65.00. Today's improved model for homes from \$5,000 up, now costs only \$33.30, a little more than half of the 1927 price.



RIGHT: Victor fan of 1927.

Improved Efficiency, Durability, Styling, Higher Values

More Refrigerator for Your Money Today

TODAY'S Kelvinator electric refrigerator gives the housewife the highest quality in increased economy, efficiency and convenience at attractive prices. Combining important developments in modern refrigerator design, the new Kelvinator is plus-powered, providing twice the cooling capacity at half the running time of earlier models.

Representing the 1937 Kelvinator line is Model K4, below, which for durability and expert styling far excels the refrigerator of ten to twelve years ago. Built for beauty as well as utility, the exterior is Permalux enamel on bonderized steel and the interior of this model is finished in white, acid-resisting porcelain on Armco iron. Rounded corners are easy to clean, and

the "table top" provides an attractive exterior feature. Extra thick Kelvatek insulation of welded steel and moisture proof construction protects the cabinet thoroughly against thermal leaks. With storage space of 4.15 cubic feet, the refrigerator is operated by a motor unit which supplies it with built-in overload protection.

Costing as much as 50 per cent less than the 1925 model, the K-4 represents the highest quality in improved design.

TODAY'S Kelvinator as shown at the left is better made and finished than the 1925 model at the right. Also it features such improvements as utility basket, chilling tray, vegetable crisper, automatic cabinet light, ice tray releases, bottle opener and others. Today's prices are about half of those in 1925.



THE SPECIAL 1925 electric refrigerator model, the Kedvinet below, formerly featured a "self-contained" unit. Exterior of the cabinet was finished in white enamel; interior food compartment was done in white enamel on galvanized iron, but was not resistant to acids. It contained a shelf area of 7.26 square feet and boasted two removable wire shelves. The bottom of the food compartment was little more than two feet from the floor.



New Electric Range Styling Is Outstanding

LIKE refrigerators, ranges are as outstandingly comparable; the electric range has seen great improvements as shown below in the 1929 and 1937 Westinghouse models.

The 1929 Senior Console range was of unit panel construction, bolted together with innumerable joints and consequent less rigidity. The 1937 Conqueror range is built in one piece, welded frame construction.

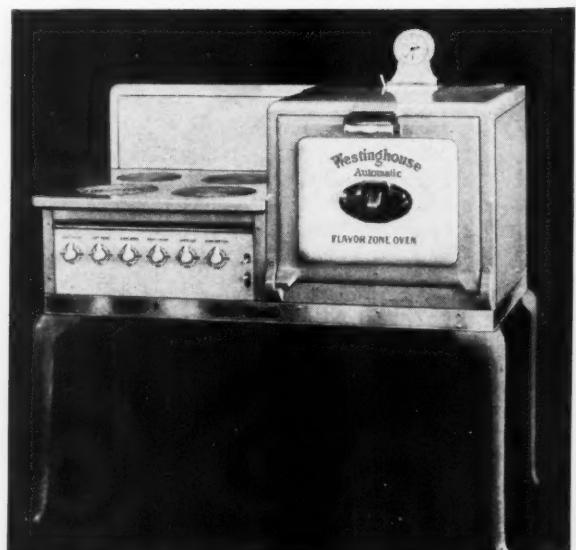
In 1929, the Corox units were of cast material of low efficiency; now the new stainless steel Corox units are used.

The oven of the 1929 range was slightly wider, but had less depth. It was approximately 20% less efficient. Balanced heat was an unknown factor in 1929.

In 1929 the approximate oven speed of bringing the temperature up to 375 degrees was 30 minutes. In the 1937 range, it takes 10 minutes from a cold oven to reach the temperature of 375 degrees. In 1929, it took 8 operations to operate the switches and temperature control mechanism, while in the 1937 range, only 3 operations are necessary.



THE illustration of the 1937 Westinghouse electric range at the left, and the 1929 model at the right adequately illustrate the improvements made during the intervening years. Yet the former model sold for almost 65% more.



Modern Bathrooms Are Colorful, Efficient

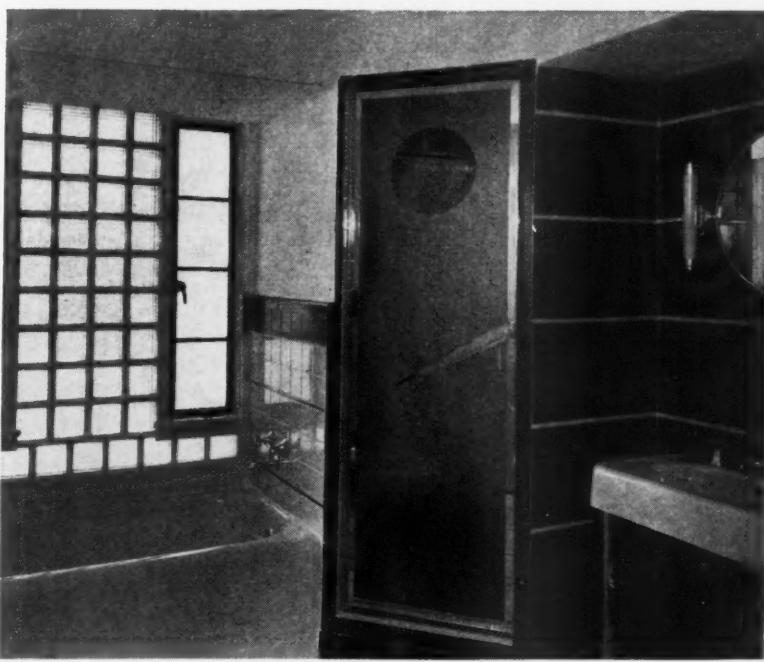
BATHROOMS today are frequently the beauty spots of modern homes. However, as well as being good looking, the efficiency and convenience of the individual items as well as the bathroom planning have been greatly improved. Here is a spot where 1937 homes make those built a decade ago quite obsolete.

The bath shown at the right is typical of this modern trend. It was built into one of the houses of Levitt & Sons, New York, which was recently completed. Colorful fixtures and tile; glass block and casement window day lighting, lumiline lights flanking the circular mirror; tiled shower stall equipped with chromium trim, frosted plate door—are some of the highlights typical of new bathrooms.

Modern styling for both appearance and greater utility characterize the plumbing fixtures. A wide variety of wall finish is possible; glass, ceramic tile, linoleum, enameled metal, enameled finish asbestos and fibre boards, set off by white metal and chromium trim, and new paint finishes are among those available. Specialties such as shower stalls, hardware and mechanical devices for better construction have kept pace with the other items which enter into the bathroom.

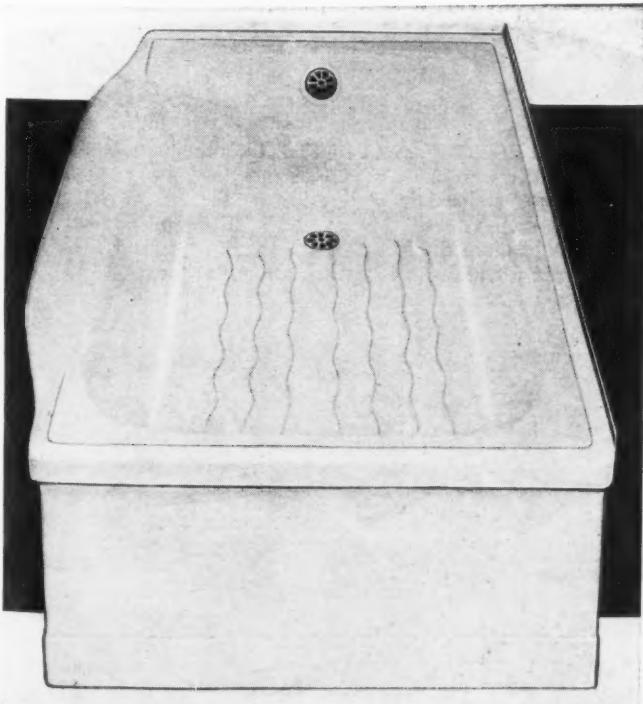
In spite of all these advances, the prices of plumbing and heating products today are below the average for the past twelve years, and 10% below the average prices prevailing in 1930 and 1931, according to the Plumbing and Heating Industries Bureau. The table at the right, based on a 1926 index of 100, shows this price trend for the last eight years. Since plumbing prices declined further than commodity prices in general, it is rather amazing to find that the advance in commodity prices was far more rapid than prices in the plumbing industry. Plumbing and heating prices have consistently lagged behind the rising market.

The man who builds or modernizes this year gets the advantage of the revolutionary improvements that have been made in everything entering into a complete plumbing installation, from the superb beauty of the fixtures in the bathroom to the trouble-free performance of the entire system.



Plumbing Supplies Cost Index

Year 1926.....	100
June 1930.....	88.3
June 1931.....	86.6
June 1932.....	66.7
June 1933.....	67.4
June 1934.....	75.1
June 1935.....	66.2
June 1936.....	73.8
June 1937.....	78.7



Smartly Styled New Type Bathtub of Acid-Resisting Enamel on Formed Metal

THE Briggs Beautyware bathtub is available in twelve colors and a variety of two-tone color combinations. It features smart styling, the safety bottom and safety seat, acid-resisting porcelain enamel on ingot iron, rust-proof to insure long life. Its light weight and flange construction on the wall side of the bathtub permit easy, economical installation, thus reducing incidental building costs. This formed metal fixture is priced in the moderate brackets.

The tub is only one of a group of new plumbing fixtures designed by Briggs to bring modern styling and greater utility into homes. Like the bathtub, the other fixtures are available in colors ranging from the conventional white through the pastel shades to jet black. A variety of two-tone color combinations is also available in the other fixtures of the new line.

Inasmuch as Briggs products were not on the market in 1926 and 1929, there is no comparable product to be shown in contrast with the present models which recently offered these revolutionary ideas to the industry.

LEFT: New model Briggs Beautyware bathtub features safety seat and bottom in porcelain enamel on ingot iron base.

Improved Efficiency, Durability, Styling, Higher Values

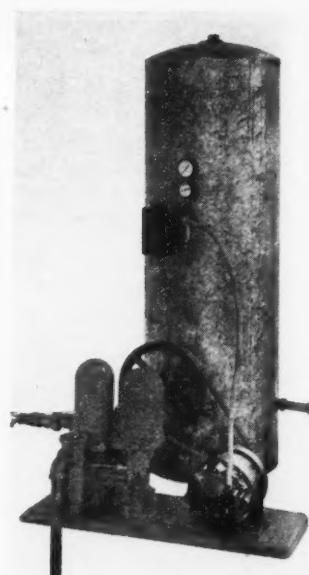


Better Pumps for Water Systems Cost Less

THIS modern, up-to-date water system at the left is built by Goulds Pumps, Inc. It is compact, dependable, trouble-free and long-lived. With present-day improvements it is an even better outfit than its forerunner, the Goulds "Ever-Oiled" water system shown at the right. Cost at present runs 25% less than in 1929.

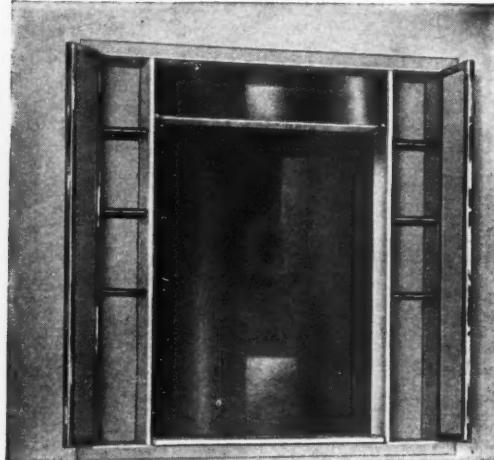
LEFT: Goulds water system today features increased dependability and capacity.

BACK IN 1929 Goulds was building water systems like the one at the right. Although it was a very satisfactory water system then, by comparison with the system Goulds is now building, it cost a third more and did not offer the larger capacities and increased dependability of 1937 pumps.



RIGHT: The 1929 Goulds system without today's advances cost one-third more.

Cabinets Add New Beauty and Utility to the Bathroom



ABOVE: 1937 Miami bathroom cabinet with chromium trimmed side mirrors and concealed lighting.

FROM the many styles of bathroom cabinets which are available today it is possible to choose one which will serve its purpose, make the room more attractive, and still be within the price range allowed for the item. At the left is the latest model de luxe Imperial style by the Miami Cabinet Div. of The Philip Carey Co.

For price comparison, two models of similar size and shape will indicate the increased values now available. A 1926 cabinet of the finest quality then available had a metal frame and heavy air cushioned door finished in stain-proof white enamel. Brass hinges were exposed, and the 1926 mirror was not copper backed, and was guaranteed for only one year against silver spoilage. The cabinet itself did not provide the light and switch, a tooth brush holder and other bathroom accessories. Although it cost approximately \$14.00, if these extra features were installed in the bathroom, they would total with the cabinet \$26.00, figured on a 1926 basis.

TODAY A CABINET with the same size mirror, 16 x 22, has No. 1 quality plate glass mirror guaranteed for 5 years against silver spoilage, piano type hinge nickel or chromium plated and concealed, and frame of stainless steel which will not chip and is almost impossible to mar. This 1937 model, completely factory wired with tubular light brackets, switch and convenience plug and equipped with razor drop and tooth brush rack, can be purchased by the contractor for approximately \$23.25, or \$2.75 less than the total price for the same materials and installation costs in 1926. This difference does not include the extra value received in approved quality and design.

Lavatory of Modern Design Sells for Less

THE Kohler Hampton model below is an enameled lavatory of modern design which features easily cleaned, flat, useful surfaces. The handy 4-inch shelf across the top provides 72 square inches of convenient space where toiletries and similar articles may be handily placed. Hot, cold or tempered water is delivered from one spout; the height of this spout is such that there is a natural air gap so that back-siphonage cannot occur. The pop-up drain is controlled by a knob set just above the spout.

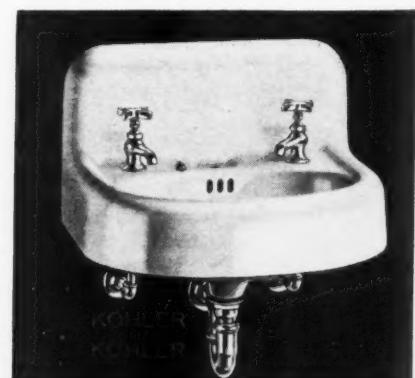
This lavatory of modern design sells in 1937 for 24% less than the round front type shown at the right did in 1926.



ROUND FRONT LAVATORIES like the one below were volume items with most manufacturers in 1926. This fixture, which is conventional in design, has no shelf, mixing faucet or pop-up drain. The appearance alone has been so greatly improved as to make the former obsolete by comparison. The fact that it sold for more in 1926 than the shelf type model of today is a good indication of what can be expected today.



THE 1926 Kohler lavatory without recent improvements sold for more than today's model.



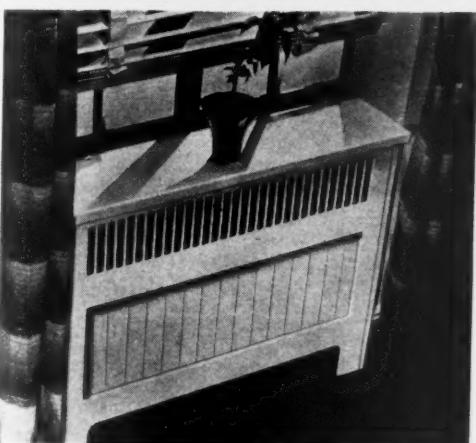
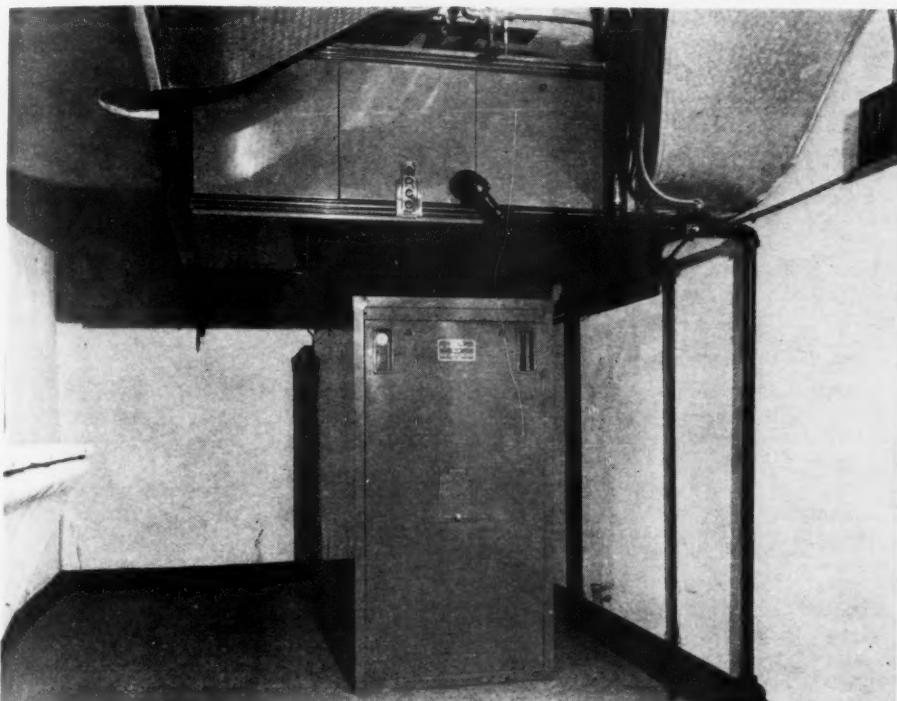
THE 1937 Kohler Hampton lavatory with many refinements offers much more at less cost.

Heating and Conditioning Have Forged Ahead

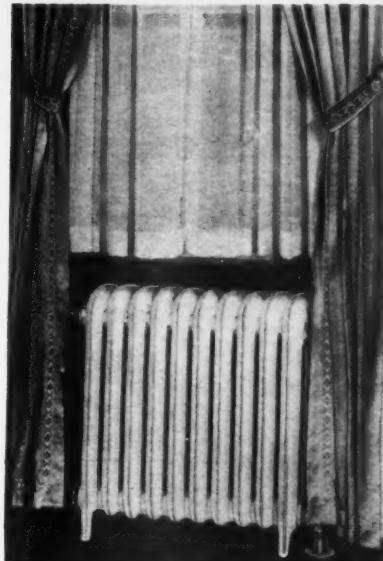
Tremendous Developments Offer a Completely New Standard of Comfort for the Homes of Today

FEW items which enter into home construction have received as much attention and publicity as the heating and air conditioning equipment in today's home. The only event comparable to the new popularity of air conditioning in the building industry was the introduction of plumbing to the American homes at the turn of the century. The opinion has been expressed that unless a home is now built with provision for air conditioning it will,

within a few years, either need extensive modernization or it will have become obsolete with a consequent loss of value. These developments in the heating field have created new standards of home comfort. A comparison of present equipment with that of ten years ago shows remarkable changes, as can be seen on the following pages. In many cases, radical improvements, recently made, have no counterpart in former heating design.



TODAY, in modern boilers and convectors, as shown at the left, both appearance and efficiency are vastly improved. Split system heating gives comfort of conditioned air and controllable radiant convector heat.



THE OLD type of heating equipment at the right had remained materially the same for a number of years including the 1926 period.

Split System Heating and Convector

ONE of the popular methods of home heating today is with the split system type of equipment. This provides complete a radiator heating, conditioning system with even heat distribution and heat modulation through controllable radiators in each room as well as fresh, humidified, clean and circulated air through the entire house. The auxiliary air conditioner devised to operate with radiator heating system was first introduced by American Radiator Co. a little more than two years ago.

Some of the accessory equipment in 1926 was sold as "extra", whereas, today, items such as boiler insulation are part of the unit.

IN 1927 HAND-FIRED BOILERS AND UGLY RADIATORS were considered the standard of the day. Now, as well as air conditioning, there is a further contribution to heating in the new radiant front convectors which replace the old radiators. These convectors produce solar radiation similar to those rays given off by the sun, which have been claimed to be of vital importance to personal comfort.

As to comparative costs on heating materials, index figures show that present prices are approximately 18 per cent lower than they were in 1927.

Improved Efficiency, Durability, Styling, Higher Values



1937 model gas-fired Mueller Climatrol is shown at the left. 1926 Mueller hand-fired furnace without present automatic control is illustrated at the right.



Automatic Heating Comfort at Reasonable Cost

COMPLETELY automatic in operation and completely packaged, the Mueller gas-fired Climatrol shown above gives so much more in appearance and performance that the value in 1937 is many times greater. In this model the fan starts automatically and is of such design and power that it delivers the air to remote outlets efficiently, yet very quietly. A modulating control turns the gas flame up or down in accordance with the outside temperature, so that fuel is conserved and both overheating and underheating are prevented. Air is moistened by a spray type humidifier that operates in conjunction with an accurate humidistat. These features are offered at a cost which is only \$100 more than the inadequate 1926 model.

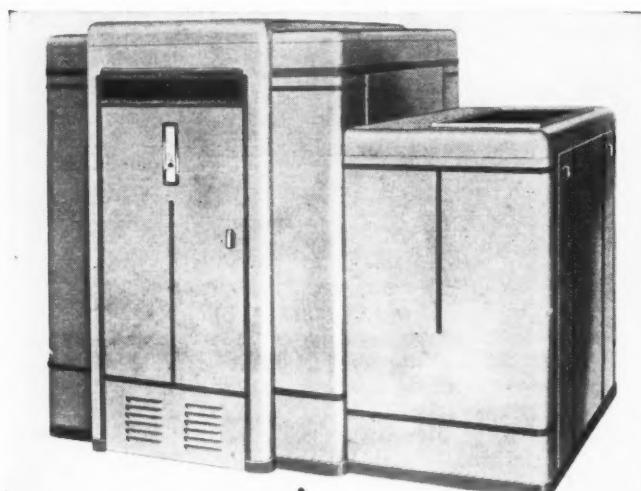
THE BEST AVAILABLE 1926 MUELLER FURNACE for air conditioning cost approximately \$100 less than the 1937 style, but it had no automatic controls, and wasn't even connected to the thermostat. A manually operated switch started the fan when the home owner wanted more air. If he wanted more fire, he had to tend the furnace manually. Now there is no shoveling, no ashes, no waste, no guessing, no noise, but filtered, heated air is delivered as desired by automatic control. Judged by present-day standards, the 1926 fan system was not efficient, as the fan was hardly capable of doing more than create a little air turbulence within the housing; the difference in price can easily be justified for the value in the new Mueller Climatrol.

Oil Burning Conditioning Unit

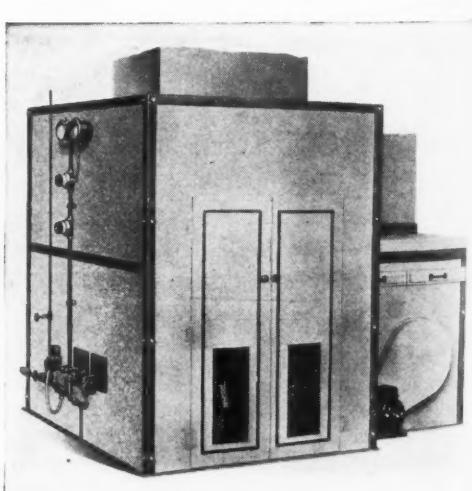
THIS year's Sunbeam air conditioning unit, as shown below, combines high efficiency, beauty and attractiveness that heretofore were unknown. The furnace, radiator, gun type oil burner, filters and blower are all encased in an attractive cabinet. The heating element of No. 7 gauge boiler plate is riveted and welded to produce a gas tight unit. The radiator thoroughly utilizes the heat before passing into the flue. To assure continued high operating efficiencies in the average household, there are no restricted gas passages which might require frequent cleaning.

THE OLDER GRAVITY WARM AIR FURNACE sold for somewhat less, but the additional advantages of an air conditioning system more than compensate for the difference in price because of the increased efficiency and convenience which automatic controlling equipment give.

Now Minneapolis-Honeywell temperature control equipment can be provided to give control from one central point, or localized from each section or room in a home. The Humidistat is adjustable and can be set to maintain any desired relative humidity.



TODAY'S Sunbeam oil-burning air conditioning unit at the left contrasts greatly with the model of a decade ago at the right.



CONTRACTORS! BUILD AND SELL THIS DRI-BILT HOUSE DEALERS! It's Sensational!

PLenty of people in your territory are anxious to buy low-cost houses. You can give them what they want—More House for the Money—by building and selling the Dri-Bilt House. It's new! It's sensational!

The Dri-Bilt House is conventional in appearance. You build it from conventional materials now carried by your lumber dealers. No extra forms, equipment, or gadgets to buy. It employs entirely new principles of construction developed by Jacques Willis, pioneer advocate of dry construction.

Dri-Bilt Houses are not an experiment. They are being built and sold today by contractors and lumber dealers for \$4,000, complete with lot. Approved by both government and private financing agencies.

WE SHOW YOU HOW

This illustrated booklet tells how contractors and lumber dealers plan, fabricate, assemble, finance and sell the Dri-Bilt House. Mail the coupon below with 20c in stamps or coin to cover cost of printing and mailing, and the booklet will be sent to you at once.

*Send for this
Booklet today*



WASHINGTON VENEER Company

Olympia, Washington

You will find enclosed 20c in { Stamps..... for which
Coin.....
please send me a copy of your booklet, "How to Build and Sell
the Dri-Bilt House."

Name

Address

City State



Jacques Willis, of the C-W Plywood Company, Chicago, Ill., nationally known pioneer of dry construction, developed and perfected the Dri-Bilt House, with a complete plan for fabricating, assembling, and selling it.

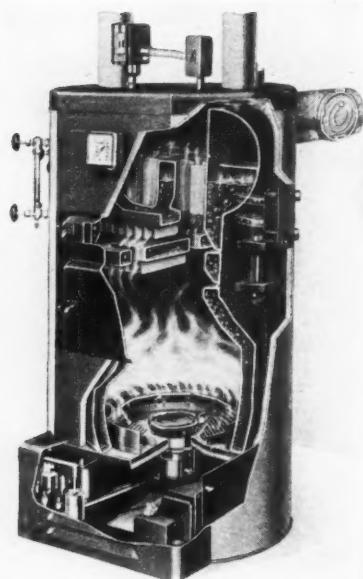


THE SECRET OF ITS LOW COST

The Dri-Bilt House may be erected with or without a basement, from your own plans. It gives variety of design, colors, and architectural effects, with all the advantages and economies of Dri-Bilt construction principles. It has conventional side walls, covered with siding or shingles; a conventional roof covered with materials of your choice. There is nothing standardized about its appearance.

The Dri-Bilt House uses familiar, conventional materials in a new way—that is the secret of its low cost.

We shall be glad to tell you more about the Dri-Bilt House, how to build and sell it.



Automatic Heating for Small Homes

TIMKEN Silent Automatic has introduced in 1937 a complete home and water heating unit made up of boiler, oil burner and water heater, all enclosed in an attractive insulated jacket. This unit is shown at the left, and was designed to bring modern heating to small moderate priced homes ranging from \$4,000 to \$7,000; this enlarges the field for automatic boiler heating since this type of unit is ordinarily built for the higher priced market.

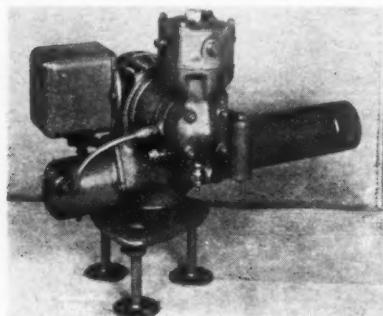
This Model BAR-3 Timken Oilboiler is designed especially for oil and is equipped with fins cast in the flues for the same high operating efficiency that characterizes larger units.

The rotary wall-flame burner is installed with all refractory and high temperature cement eliminated from the combustion chamber; chromium steel has been used in their place, allowing the burner to be completely installed at the factory.

Oil Burners Improved, Cost Less

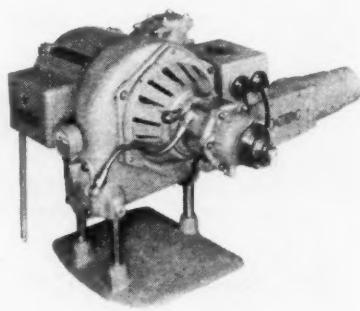
OIL burners have shared in the advances which the whole heating field has made. Burner units are available either for more efficient conversion jobs or to be used in connection with special boilers which several manufacturers are now making. The 1937 Williams Oil-O-Matic burner is shown at the left.

Features include patented metering device which regulates the quantity of oil to be burned per hour of operation, low pressure atomization which allows the use of a larger fuel opening and lower priced fuel oil, and the patented diffusor which prevents heat waste up the chimney and half-burned oil.



THIS 1930 MODEL sold for \$100 more than a similar burner today, but without the additional refinements and improvements which have since been made. As compared to 1926 and 1929 prices, today's Oil-O-Matic sells for at least half, and in many cases for as little as one-third of the prices in effect formerly.

1937 increased efficiency and reduced prices are featured in the Williams Oil-O-Matic burner at the left, while the 1930 model, which sold for \$100 more, appears at the right.

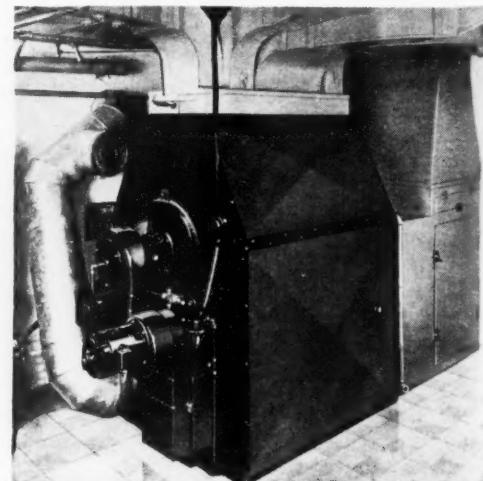


Heating and Air Conditioning Unit in An Attractive Cabinet

THE latest model Gar Wood Tempered-Aire unit consists of filters, blower, burner, humidifier and oil furnace engineered into one compact co-ordinated system enclosed in a steel cabinet, finished in green lacquer. As a result of designing an oil burner and furnace together, the Gar Wood unit extracts and uses approximately 90 per cent of the heat generated by the burning oil. This Model 102 saves on fuel because it uses No. 3 fuel oil in contrast to the 1929 model which was more expensive to operate because it used highly refined fuel oil. Tempered-Aire models are now made in five types and sizes to fill all domestic heat requirements from those of a small home to those of a large mansion. The basic design is identical in all systems with only slight changes in the capacity. The air delivery of the model shown is 1,000 to 1,575 cubic feet per minute.



LEFT: Today's compact Gar Wood Tempered-Aire unit is completely enclosed in one cabinet. Right: The 1929 Gar Wood unit was larger and less efficient.



FIFTY PER CENT HIGHER PRICED than a similar present-day Gar Wood unit, the 1929 unit was the first co-ordinated automatic heating and air conditioning offered for residential use. Although it provided oil heating, filtering, humidifying, circulation, and blower cooling, it performed less efficiently than today.

Put easy Housekeeping right in the Plans!

*Let Gas take care
of the 4 Big Jobs!*

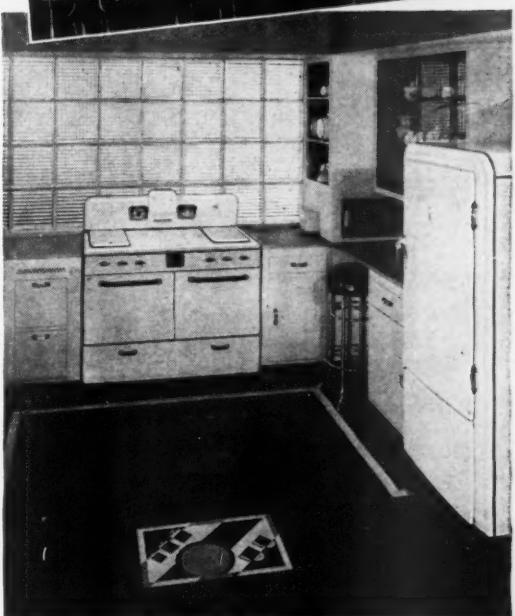


COOKING, refrigeration, water-heating and house-heating. These are the four BIG jobs when it comes to running a home. But they don't have to be *hard* jobs. Up-to-date GAS equipment can make them easy!

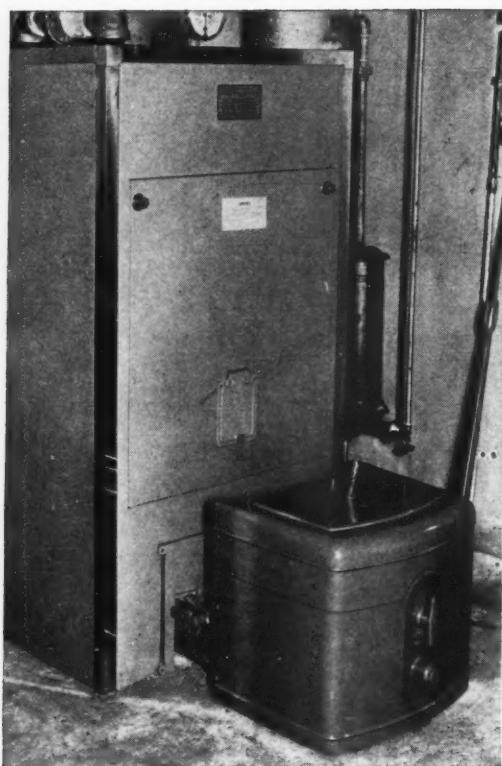
Gas house-heating and water-heating units need scarcely any attention from one year's end to another. They are clean and silent. And there's no problem of fuel storage or delivery. The modern gas range shortens kitchen hours. New automatic features make cooking easier—pleasanter. Gas refrigeration operates *silently* at small cost.

Get the up-to-date facts on how much GAS can do to make the homes you design really livable—and easy to run. Your local Gas Company will gladly cooperate with you in the selection and installation of gas equipment.

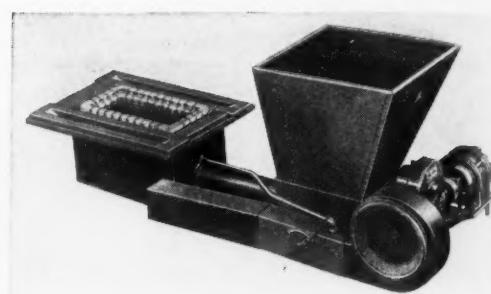
*Be sure the Gas Appliances you specify
carry the approval Seal of the American
Gas Association Testing Laboratories.*



A M E R I C A N G A S A S S O C I A T I O N



NEW convenience is offered in the bin feed feature of 1937 Iron Fireman stokers as shown at the left.



Hopper type stokers were the only models available in 1928.

Coal Shoveling Now Unnecessary with Stoker-Fired Unit

BIN FEEDING has been introduced to make coal an automatic fuel. A feed worm conveys coal from bin to furnace in the latest Iron Fireman stoker. Features of the 1937 model include constantly adjusted air supply; silent, efficient radial vane fan; drive mechanism in attractive steel housing, lined with sound-absorbing material; new cold-rolled steel feed worm for longer life, alloy steel to resist wear and corrosion, continuous feed transmission. Iron Fireman now offers 105 models in various sizes to fit every heating plant. As compared to 1928 domestic stokers, today's model of comparable size costs 37% less.

IN 1928 only hopper type machines were available, and these in a very limited number of models. The air supply was manually adjusted, a circular vane fan was used, and the drive mechanism was exposed. The stoker had a cast feed worm, and ratchet drive. Without today's important features, it sold for 53% more.

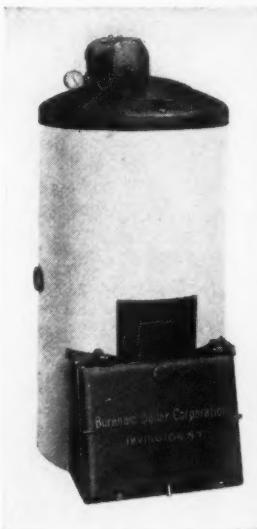
New Boiler Design for Anthracite Fuel

THE Anthracite Industries' laboratory has recently designed and perfected a highly efficient, simple, clean yet non-mechanical heating unit which is now being made by Fitzgibbons Boiler Co. and the Burnham Boiler Corp. This new boiler, named "Antra-Heat," introduces a revolutionary method of burning anthracite coal. One of these boilers is illustrated at the far right, the important features of which are the elimination of a firebox and fire door, and a new type of grate.

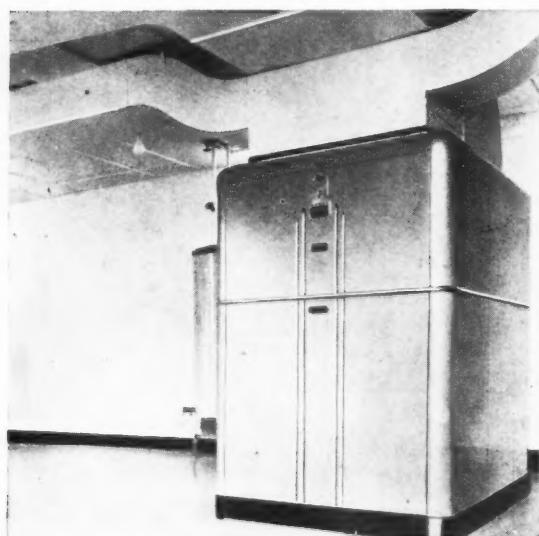
A thin layer of incandescent heat is maintained under complete thermostatic control. The fire rests upon a conical, spiral base which, when rotated, permits the ash to fall into a standard container. Refueling is accomplished through a large port in the top of the boiler, and sufficient fuel is stored for three to four days' operation in mild weather and from one to two days' operation during the coldest weather. Draft is maintained and controlled through vents; heat is transmitted by direct radiation. The inside of the main flue is jacketed, as are the inner walls of the boiler proper well above the fire line.

The boiler is 53½" high, has an overall diameter of 26" and an overall width of 31".

NO COMPARABLE PRODUCT was available in 1929, as this is a recent development bringing semi-automatic heat to low cost homes. Now with this new boiler, combustion of fuel is practically complete. No clinkers are developed, and no fuel can be lost through the grate. Tests indicate an increased efficiency of approximately 10 per cent in heat extraction. A year's supply of fuel for this boiler can be stored in a closet-like bin approximately 6' x 6' x 6'.



THE NEW "Antra-Heat" boiler at the right burns anthracite coal by a recently developed method.



New Comfort Through Clean Air Delivered from a Modern Conditioning Unit

KNOWN as the Fine-Air Furnace, this Norge product has been designed to give perfect satisfaction in the heating of moderately priced homes. Providing complete winter air conditioning, the unit removes 95 per cent of all impurities in the air, heats it to any degree desired, humidifies it so that it will have the healthiest water content, and circulates it throughout the house under gentle pressure. There are no "cold spots"; every room is automatically kept at the same even temperature.

The Fine-Air Furnace may be fired by either the Norge Whirlator oil burner or the Norge gas burner. Reduced heating cost through operating economy is featured in the unit. Attractive appearance and clean operation make possible the use of basement space for recreation or other such activities.

THE Norge Fine-Air Furnace at the left presents an attractive appearance; it removes 95% of air impurities.

ON A VALUE BASIS no 1929 heating plant offered all the improvements and advantages of this up-to-date air conditioning unit. The value represented here could not be had at any price a few years ago.

That's the window
that helps me deliver
**MORE HOUSE
FOR THE MONEY**



It cuts installation
costs 25 to 50 cents
per window and includes
a guarantee of 25 years
against rot or decay

You
Should
Try It.

HUTTIG
OF MUSCATINE

RED-E-FIT ROT-PROOF WINDOWS OFFER
The first great improvement in stock window construction in a generation.

THIS IMPROVED WOOD WINDOW—

- Is ploughed and bored for weights and cord.
- Has the dovetailed putty lock.
- Is ready fit for any standard frame.
- Saves 25 to 50 cents on each window on the job.
- Is chemically treated to prevent rot.
- Is better than the old style and costs less installed.

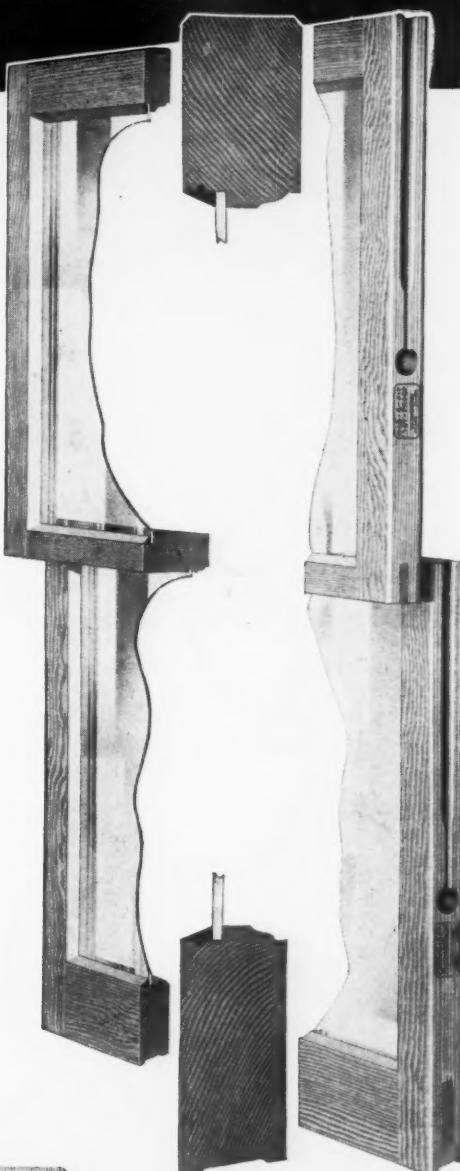
And is **guaranteed for 25 years** against rot and decay.

Look for the Trade Mark Brand on Edge of Each Sash.

Ask your lumber dealer for the *Huttig of Muscatine*

Red-E-Fit ROT-PROOF WINDOW
or write us for free descriptive literature

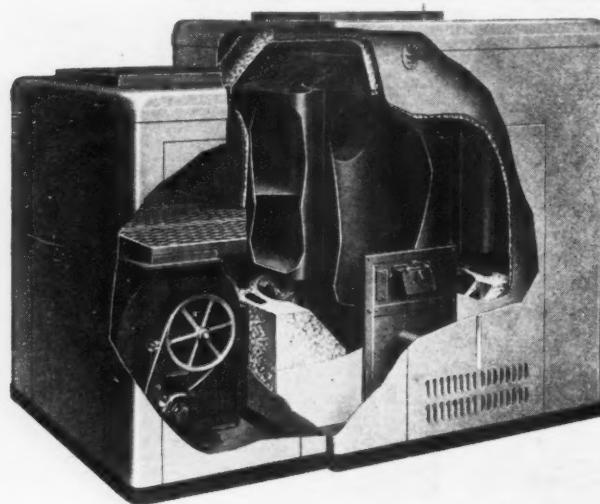
RED-E-FIT
ROT-PROOF
WINDOW
TRADE MARK



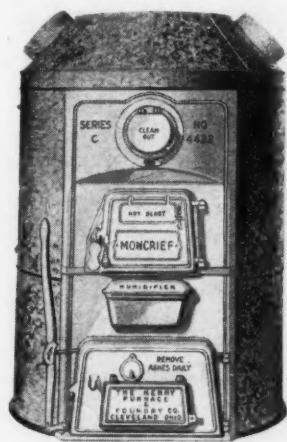
HUTTIG MFG. CO., **Muscatine, Iowa**

Conditioning Now, Gravity Furnace Heating Then

THE Moncrief oil-fired air conditioner, as made by The Henry Furnace & Foundry Co., and shown below, offers the home owner, even in the moderately priced home, the comfort of warm, humidified, filtered, circulated air, automatically controlled. This cut-away view shows the various parts which are responsible for the better job of heating performed today. The pre-heater radiator allows more efficient transfer of heat to the circulating air, which is distributed around the two heating elements in the enclosed chamber. The blower is of large capacity, and slow speed.



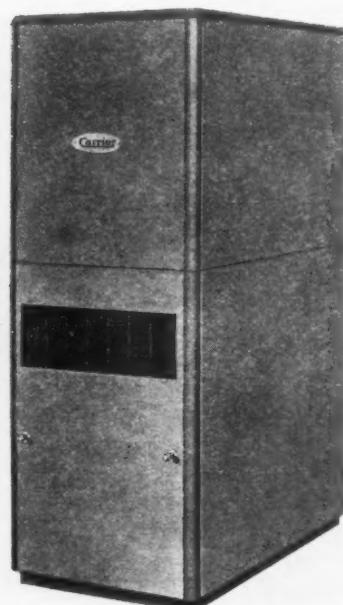
THE OLD GRAVITY WARM AIR FURNACE, although it could be purchased at fairly low prices, did not provide the comfort of positive automatic heat. Before there were no filters; now included are filters of the replaceable type, and there is also an automatic humidifier of ample size. A model such as the one shown below in 1926 might run from \$200 to \$300 in cost, as compared to around \$675 for the conditioner at the left. An oil burner or stoker would add about \$200 more to this price. However, the difference in cost on a value basis is well warranted when one considers today's demand for greater comfort.



THE cut-away view at the left indicates the improved heating mechanism as found in a Moncrief furnace today. The positive circulation, cleaned air containing enough moisture are vital to today's comfort; the 1926 model at the right had none of these present-day refinements.

Engineered and Styled for Today's Standards of Efficiency and Comfort

THE unit shown below adequately illustrates the vast changes in conditioning equipment as manufactured by Carrier Corp., a pioneer in the field of both year-round and winter conditioning. Modern design has made today's product more compact, with parts enclosed in a neat cabinet which takes up much less floor space. The equipment is highly efficient and economical; operation is now more quiet. Models are available for any type of fuel. Greater comfort is offered, due to improved and simplified control.

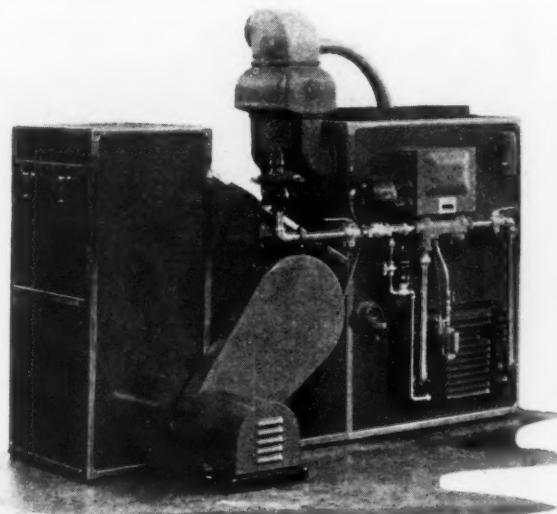


CARRIER air conditioning units, as illustrated at the left, are now enclosed in one compact cabinet.

THE 1927 unit, as seen at the right, took up much more space, did not perform as many duties, and was higher priced.

FORMER EQUIPMENT was expensive to manufacture and install. Although many of these units are still giving satisfactory service, the equipment took up much more floor space and was limited to gas firing. Provision for domestic hot water was not included. This 1927 equipment sold at a price over 50% higher than present models designed to replace them.

Today's unit does more service in the home, as it now gives year-round domestic hot water in addition to heating and air conditioning. Application is more flexible; the units are available to the owners of existing houses regardless of old type of heat, as well as new construction.



When Prospects see this Sign

House and Garden's "Ideal House," Fox Meadows, Scarsdale, N. Y., painted with Sherwin-Williams Stucco and Concrete paint, S-W Semi-Lustre and S-W Flat-Tone Wall Finishes.

... your Selling Chances Rise!

Paint's the very first thing your prospects see of any house you sell!

Architecture counts. Equipment, too. So does location. But it's good looking paint that starts the sale—and if it's Sherwin-Williams, you've gone far in closing it!

Builders of model homes and housing projects know this. They paint with Sherwin-Williams for the eye-catching power of its beauty, plus the confi-

dence it inspires in their prospective buyers' minds. They realize that "Painted with Sherwin-Williams" infers "quality throughout" the houses they display—and sell.

Put Sherwin-Williams Paints and the Sherwin-Williams name to work helping you attract and satisfy more prospects—sell more homes. Write The Sherwin-Williams Co., Cleveland, Ohio and principal cities for full particulars.



SHERWIN-WILLIAMS PAINTS

More Value in Commercial Buildings

VALUES of commercial buildings are measured solely on an income basis, and on their ability to draw business to a tenant. For that reason the commercial building field is not confronted with the element of personal preference, as is home building. Modern styling, using the latest materials that offer opportunities for showmanship, has demonstrated its ability to attract attention and increase business of merchants, and therefore dominates this type of construction. Starting several years ago with a "Modernize Main Street" campaign that swept the country, this new functional technique is accepted today as the standard for practically all of this construction, both new and modernization work.

Manufacturers of building products, by improvement, development, and research, have made numerous contributions to the increased value of commercial buildings. Attractive equipment and fixtures have played a part, together with modern illumination, display window materials, glass blocks, structural glass, enameled steel, stainless steel, metal mouldings, plastics, decorative plywood, and others.

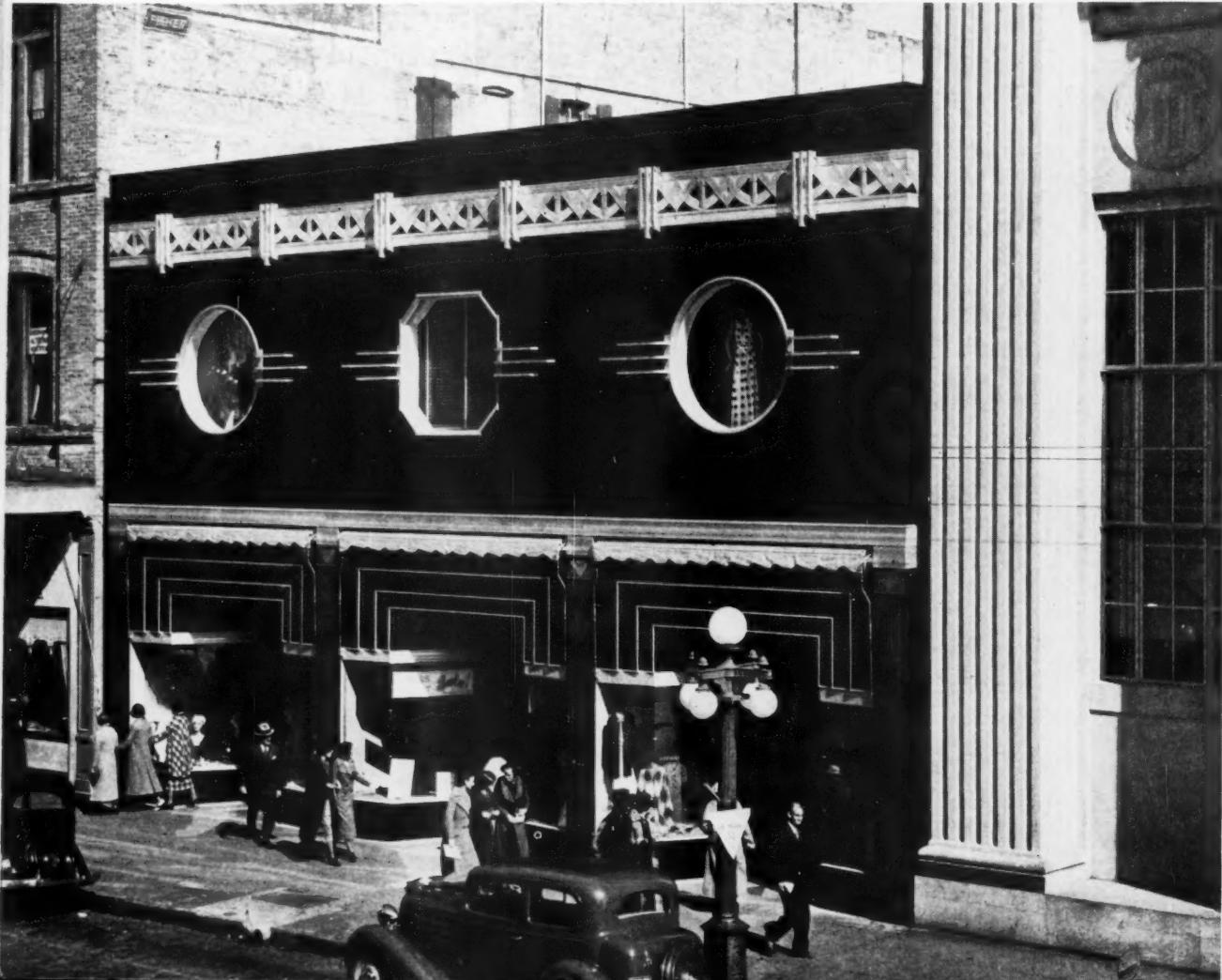
The ability of modernized store fronts and display windows to draw patronage, and give merchants an advantage over their business rivals demonstrated the merits of new materials and architectural effects. New construction has benefited from new and improved products that were introduced in the field of store modernization. Many interesting stories can be told of improved returns from modernized commercial buildings. The Pittsburgh Plate Glass Co., for instance, has the record of a vacant

BEFORE

store building in Denver that went begging at \$55 a month. A new front, involving an expenditure of only \$515 for cutting and resetting old glass, black and white Carrara, special metal, copper-back mirrors, paint, brushes and miscellaneous items, rented the building for \$150 a month. The owners state: "This new front has made our business. Without it we could not continue operations, and should we discontinue our business this property would rent for more than \$150 a month."

Some of the building products used in commercial structures today were not available in 1926 or 1929. Others have been greatly improved since that time. The Algoma Plywood & Veneer Co., Chicago, reports

(Continued to page 162)



AFTER

THIS store modernization job not only was a successful building project, but enhanced appearance of the adjoining Exchange National Bank Bldg., Tampa, Florida.



INSIDE TRIM FOR WINDOWS AND DOORS.

UNITRIM—Packed in paper

PACTRIM—Packed in cartons.

All horizontal members in one package for one opening. All vertical members in one package for one opening. Door Trim packed the same, or one complete side or two complete sides in one package.

Mr. and Mrs. Builder: Save your money and insist on Inside Wood Trim The Unitrim or Pactrim Way because:

- 1 It means Lower Cost for the finished Product.
- 2 Protection from the elements retains the original sparkling appearance.
- 3 PRECISION millwork and PERFECTION quality.
- 4 Convenience of buying—correct quantity to fit every opening. The Home completed SOONER.
- 5 Manufactured from thoroughly kiln-dried lumber and no joints to open up later on, because the original dryness is sealed in the packages.



This seal will be found on every genuine SPOKANE PINE "Precision" Weatherite Frame of Idaho White Pine or Ponderosa Pine.

**Idaho White Pine
Ponderosa Pine
Lumber
Mouldings
K.D., Frames
Trim, Lath
Cut Stock
Industrial Items**

**SPOKANE PINE PRODUCTS COMPANY
LONG LAKE LUMBER COMPANY**

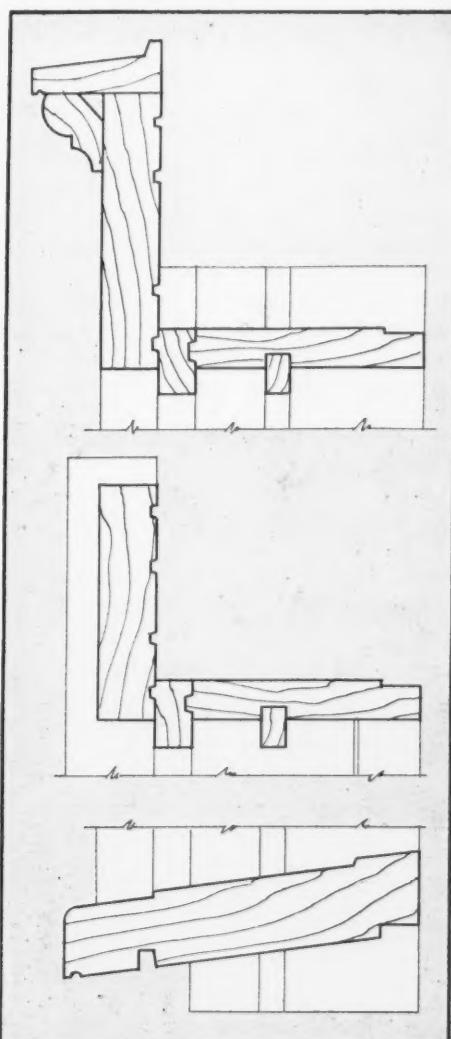
Plants and General Offices — SPOKANE, WASHINGTON

WINDOW AND DOOR FRAMES

Our Spokane Pine PRECISION Frames have no superior. The millwork is a cabinet job—not an ordinary job of millwork. Weatherite special Tongue and Groove joints between pulley stiles and blind stops, and blind stops and casings. No time wasted re-fitting when putting frames together.

ask your dealer

for Spokane Pine PRECISION Frames and Trim.



MR. DEALER:

We ship mixed cars of Frames, Trim, Lumber, Mouldings and Lath in Ponderosa Pine and Idaho White Pine. Send us your orders or inquiries.

50% More Outlets in 1937 House

Today's Wiring Standards Much Higher Than 1927 to Accommodate Increased Electric Service. Unit Costs Are Down—but Quality is Up.

By ROBERTA YEATON,

Adequate Wiring Bureau

THE popular question, "Why aren't building costs lower?" ignores the intrinsic values of the *rising standard* of building construction.

An important distinction lies between price levels and the "high cost of building." The point is that most equipment prices actually are lower and through volume production are constantly reducing—but higher standards of construction tend to pull total home costs in the opposite direction.

As better materials and equipment have gained wider distribution, the resulting reduction of prices has made improved building possible without adding to the whole cost of construction. The present high standard of livability, durability and good taste in average dwellings was available only in homes in the higher brackets as recently as 1927. Without consistent price adjustments, as improvements have increased, today's \$8,500 house would no doubt cost 20% more—and be worth it, in comparison to houses built for \$8,500 ten years ago.

The new and higher standard of adequacy for electrical installations notably emphasizes the dramatic progress of the American home. The nationwide popularity of the convenience of electrical service for a multitude of home uses has, in an astonishingly brief period, immeasurably changed and raised the nation's standard of living. If unit prices had not reduced, as demand for more and more

elaborate installations increased, this advance would not have taken place.

In the average \$8,500 home ten years ago, for instance, a wiring system of branch circuits of No. 14 wire, to no more than 40 outlets for lighting, switches and appliances, was completely adequate. Today, the minimum outlet requirements for a similar residence would total no less than 65 outlets, more branch circuits of No. 14 wire would be needed and larger wire mandatory to certain appliance outlets. If present wiring were installed at the prices which prevailed ten years ago, the cost would be 20% to 25% higher.

The figures tell the story. On September 1, 1937, No. 14 two-wire armored conductor, commonly used for circuit wiring in residences, was listed at \$3.60 less per 100 feet than the listing of September 1, 1927. The present higher standard which demands more wire per house is naturally more readily employed at the new price level.

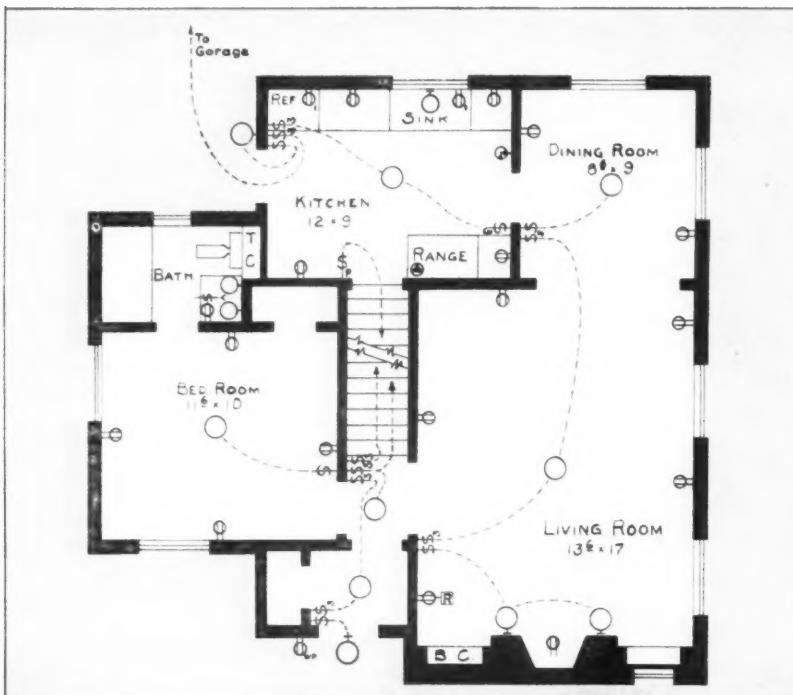
The same condition holds in respect to the demand for more and better switches, convenience outlets and lighting equipment. The old tumbler and push button five-ampere switches, used in standard practice in 1927, cost 45c with plate. Today ten-ampere bakelite toggle switches are the standard and cost 42c with plate—a better looking, more serviceable switch at a lower price.

Similarly, the old style single convenience outlet with brass plate cost 47c in 1927; the new duplex convenience outlets of improved types, with plates of various compositions, cost 31½c—double quality and quantity at 33% less.

Other items on the cost sheet compare as favorably. In 1927 the pendant type lamp socket was assembled from parts at a cost of 50c. Now an improved durable assembled socket serves the same purpose at 37c.

The fact that prices of building equipment have adjusted all along the line is particularly important in respect to wiring installations. So rapidly have the home uses of electrical power multiplied that residential service has

(Continued to page 146)

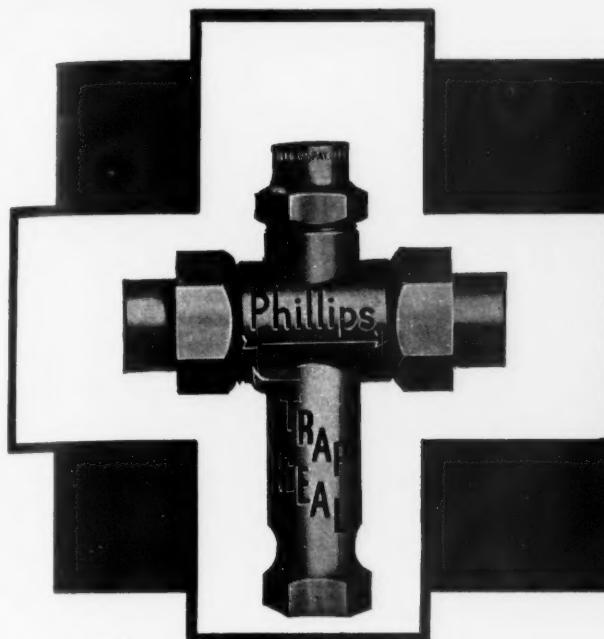


UNIT COSTS DOWN

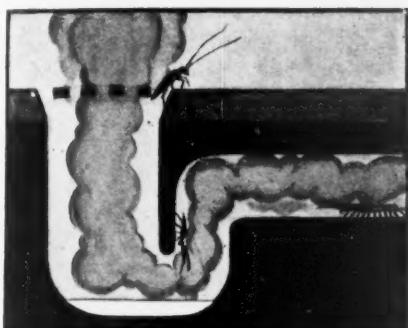
	1937	1927
Armored Conductor No. 14-2	\$22.90 (per 100 ft.)	\$26.50 (per 100 ft.)
Switches	42c (10-amp.)	45c (5-amp.)
Lamp Socket	37c (assembled)	50c (unassembled)
Outlets	31½c duplex	47c single

SYMBOLS	
○	CEILING OUTLET
○	WALL OUTLET
○	CLOCK OUTLET
○	DUPLEX CONVENIENCE OUTLET
○	SINGLE CONVENIENCE OUTLET
○	WEATHERPROOF CONVENIENCE OUTLET
○	SWITCH AND CONVENIENCE OUTLET
○	RADIO AND CONVENIENCE OUTLET
●	RANGE OUTLET
○	SINGLE POLE SWITCH
○	3-WAY SWITCH
○	SWITCH AND PILOT LIGHT

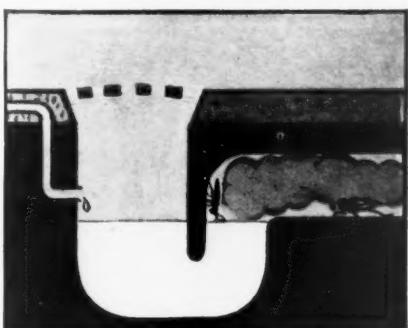
TYPICAL wiring layout of a small home illustrating the 1937 standard of adequate wiring for electrical convenience. This is the minimum number of outlets for up-to-date electric service based on the electrical industry's handbook of interior wiring design.



KEEP OUT SEWER GAS and VERMIN



Picture of an unsafe, dry trap in a basement drain. The water seal has partly evaporated, leaving an open passageway into the home for sewer gases and vermin.



Phillips Automatic Trap Seal Valve keeps this trap filled—sealed! Water seal forms impenetrable barrier. Gases and vermin cannot enter this home.

Phillips
AUTOMATIC TRAP SEAL VALVE

United States Patents 1,759,826 and 1,970,744 and others pending.
Patented in Canada, Australia, Great Britain, France and Germany.

Manufactured by The Chicago Faucet Company, and
distributed by them through leading plumbing wholesalers

Deliver More House for the Money BY INSTALLING

THE PHILLIPS AUTOMATIC TRAP SEAL

Surveys show that nine out of ten homes are exposed to disease-carrying, sewer-bred vermin, foul-smelling or dangerous, odorless, explosive sewer gases through dry basement drain traps. The Phillips Automatic Trap Seal Valve provides the only sure protection against the dangers of dry drain traps.

Contractor-Builders:-

The Phillips Automatic Trap Seal Valve installed in your houses will make them easier to sell, and will help build your reputation as a user of high-quality materials and equipment.

How It Works:-

The Phillips Automatic Trap Seal Valve is installed in the supply line of a frequently used fixture. Whenever the faucet is opened, enough water flows through the valve to maintain the water level in the drain trap.

The Chicago Faucet Company
2700-22 N. Crawford Ave., Chicago, Ill.
Please send me without obligation catalog and information on
Phillips Trap Seal Valve.

Name _____

Address _____

Town _____

State _____

Occupation _____

50% More Outlets

(Continued from page 144)

completely changed character in less than the length of a decade. Electric lighting has been supplemented by every kind of electrical convenience. It has become important to avoid the liability of electrical obsolescence in new homes. Convenient outlets and adequate conductors must be provided to accommodate the array of electrical appliances every householder owns today. Room for electrical expansion, after the service has been installed, is just as important. One survey uncovered the fact that each wired household in its area averaged three new appliances purchased each year. With the quickening demand for higher wattage, irons, toasters, heaters, larger capacity refrigerators, and with the new popularity of electric ranges, dishwasher sinks, water heaters and other heavy duty equipment in kitchen, laundry and dining room, power supply is an important factor.



ONE WAY to be sure of having a convenient place, no matter where you are, to plug in an electric fixture is to install this new plug-in strip. Less than one inch square, it is installed flush in plaster walls on top of or inserted in baseboard, providing an outlet every 6 or 18 inches along its length.

The trend toward lighting with portable lamps, cove lighting and built-in units emphasizes the necessity for up-to-date lighting installations. It is not unusual to see four portable lamps of different types in use in a living room such as the floor plan illustrates. Larger living rooms are often furnished with five or six, both for reading lamps and for decorative purposes. Owners of typical \$8,500 homes such as this one have also become accustomed to more than one radio, and are even beginning to add radios to kitchen equipment. This one change alone demands additional outlets and special wiring, both for satisfactory reception and for the sake of sightliness.

New Standards of Wiring Adequacy

Accurate averages of electrical consumption have been computed from national surveys conducted over a period of years and brought up to date with the cooperation of the several branches of the electrical industry.

Averages computed according to sizes of dwellings are rated in simple tables which define service entrance requirements, outlet requirements, and the number of branch circuits required for lighting and for appliance operation. All requirements are based on the size of the dwelling and the recorded average uses and total consumption of electrical power in such dwellings. The rate of acceleration of increase of the householders' use of electricity is also computed and minimum provision for normal expansion is accurately indicated.

All of this information is available in the Handbook of Interior Wiring Design recently compiled by a committee of distinguished representatives of the electrical world from impartial inclusive surveys of collected fact. The standard establishes minimum adequacy. In no respect does it surpass present averages and the recorded trend. It is the standard which offers the American builder a sure means to a long-time postponement of electrical obsolescence in this, the "electrical era."

Major Requirements:

All services shall be three-wire. The gauge of the wire and the rating of the service equipment must be determined according to the floor area of the finished rooms of the dwelling.

Appliance branch circuits of No. 12 wire should supply convenience outlets in kitchen, laundry, dining room and pantry.

Special purpose circuits are required for certain fixed heavy-duty appliances.

Branch circuits of No. 14 wire, to supply lighting outlets and all other convenience outlets, should be provided according to the floor area of the finished rooms of the house—one branch circuit for each 500 square feet of floor area. Outlets supplied by these circuits should be divided as equally as possible among all such circuits.

Modern standards of interior finish render it desirable to provide for the concealment of telephone and radio wiring when the house is built.

Convenience outlets should be of the duplex or other multiple type. Exceptions are the placing of a special outlet for a wall or mantel clock, a ventilator, refrigerator or other special unit.

The main lighting unit of each room, at least, should be controlled by a wall switch on the lock side of the door near the door frame. Three-way switches are needed if the room has two or more commonly used doorways, separated by a distance of 10 feet or more.

Bracket lamps are required for supplementary lighting at work centers in kitchen, pantry and laundry. Convenience outlets should be installed in these locations, at convenient height.

Convenience outlets should be installed:

In each 20 feet of hallway (or major fraction thereof).

For buffet and table use in dining room and dinette.

In bathrooms, near mirror and away from tub.

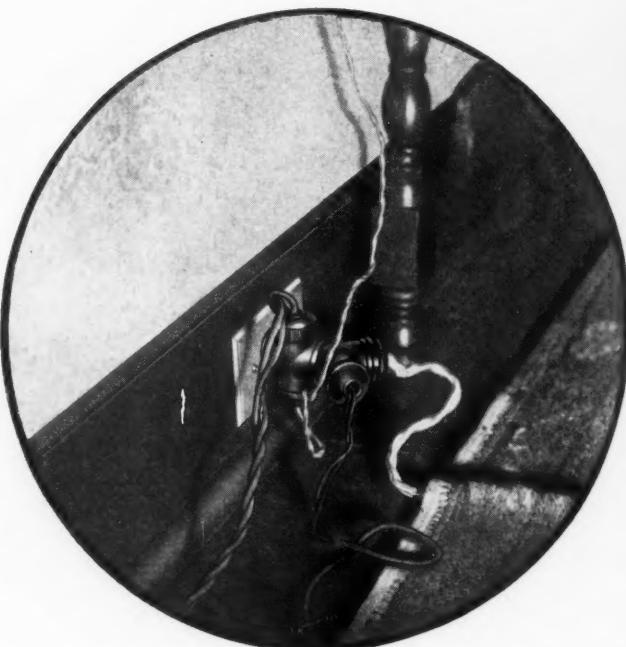
One in attic and in basement.

Weatherproof type outdoors, near entrance, and along each 15 feet of wall (or major fraction thereof) on covered porches, terraces and patios.

The following rule for convenience outlets applies to living rooms, libraries, sun room, reception halls, recreation rooms, bedrooms: No point along the floor line in any wall space, unbroken by a doorway, should be more than 6 ft. from an outlet in that space; also, at least one outlet in each usable wall space 3 ft. or more in length at the floor line.

Special problems in the lighting of closets, hallways, garages,

(Continued to page 148)



NO MORE OF THIS—The modern home must provide for enough convenient places to plug in electrical devices and equipment without such accumulation of dangling, dangerous wires seen above.

Modern Adhesive Sealex Linoleum

Saves Up to 20% on Each Installation



To heighten sales appeal, the finished floor may be "Personal-ized"—easily—inexpensively, with a factory-cut, factory-perfect Personalizing Unit like the Sealex "Bowl of Fruit" Inset shown above. The walls and drainboard have also been made permanently beautiful and easy-to-clean with Sealex Wall Linoleum and Sealex Plain Linoleum respectively.

SEALEX Linoleum keeps step with today's residential construction. Modern Adhesive* Sealex Linoleum offers a stronger, longer-wearing floor, for less money!

No more felt lining. No extra paste. No heavy rollers. Just a bucket of warm water and a soft bristle brush to activate the powerful, factory-applied adhesive on the back of Adhesive Sealex Linoleum.

And instead of 50 to 60% adhesion, a finished floor

*Patent No. 1,970,503

of Adhesive Sealex Linoleum has at least 95% adhesion!

Sales appeal? This smoother, tighter-gripping floor, and the smart "decorator's colors" found in Adhesive Sealex Linoleum, mean faster sales to hundreds of builders and developers. Moreover, the savings in workmen's time and materials cut cost as much as 20%. Write for full details on this time-saving, money-saving, sales-building linoleum today.

CONGOLEUM-NAIRN INC., KEARNY, N. J.

SEALEX LINOLEUM

TRADEMARK REGISTERED

Floors and Walls

50% More Outlets

(Continued from page 146)

entrances, attics, basements and bathrooms are solved in the Handbook in terms of minimum adequacy. General rules for lighting the active rooms of the house are included.

Lighting, convenience and switch outlets for each room are indicated so that a minimum installation may be planned for maximum service, according to the size of the house.

The floor plan illustrated presents a typical application of the new standard.

Comparison of Typical Installations

Two six-room houses with detached garages, built in the same locality for \$8,500 each, were recently compared in a wiring survey. One house was built in 1927, the other in 1937. Wiring, total outlets and total cost were checked. The result is interesting and clearly demonstrates how wiring has improved as prices have lowered.

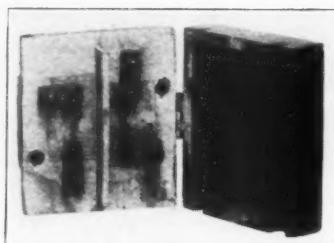
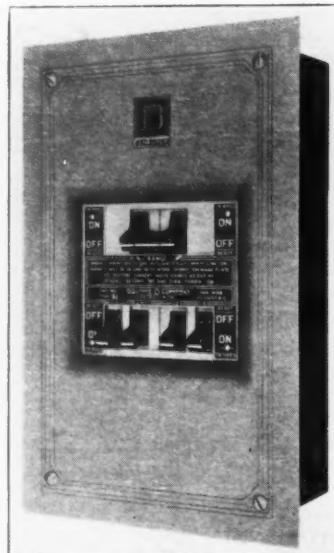
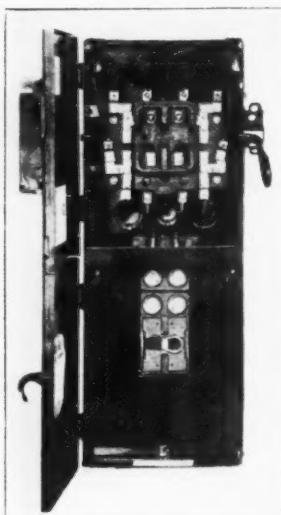
	1927 House	1937 House
No. of Ceiling Outlets	14	17
Bracket Outlets	3	4
1-Way Switches	11	13
3-Way Switches	2	6
Convenience Outlets	10	16
Special Outlets	2	9*
—	—	—
Total Outlets	42	65
Cost of Installation	\$75.00	\$115.00

*includes outlets for range, refrigerator and radio

The cost of each installation is almost the same, per outlet, with the advantage slightly in favor of the 1937 layout. Greater value for the dollar is found in the superiority of the wiring itself. The 1937 installation provides more than 70% more service at a little less than 50% more cost. The inclusion of radio wiring and special circuits to range and refrigerator necessitates service equipment of a higher rating than the 1927 layout required. Better wiring for power adequacy is provided at no additional cost per outlet.

1937 STYLE—fuses are eliminated—fire and shock proof, compact—only 11" x 6 1/2", good looking. When lights go out, just flip a lever to restore circuit.

OLD STYLE—entrance and range switch were unsightly, large, dangerous to change fuses. At right below—early form of fuse block.



Teamwork Brings Service

(Continued from page 95)

All work is done according to definite trade standards and practices which furnish the basis for all job specifications.

Now let us see how easy or difficult it is for a New Haven home prospect to get his new home.

Mr. and Mrs. White answer an advertisement. A salesman calls on them. That is where the Whites' worries and work stop and the salesman's duties begin. The salesman takes over the project just as though it were to be his own home.

If suitable plans are not available, a guild architect is called in. If financing is required, the salesman handles all the details of filling out the necessary papers. Most of the financing is done in New Haven locally through The Building and Loan Association or the First Federal Savings and Loan Bank.

If Mr. and Mrs. White have no plot of ground, the salesman, after inquiring about their desires, puts a guild realtor to work.

The Whites are told about the excellent materials and high construction standards which are a definite part of each guild job. They are taken to guild headquarters to look over and select desired materials.

Within a very short space of time the deal is closed between a guild contractor and the prospect. The White family gets exactly the design and type of home that fits their needs and desires. It is located on a plot of their own choosing.

How the Sales Department of the New Haven Housing Guild Is Managed

The sales department at guild headquarters is managed and run by Mr. Matthias in the same efficient manner as the sales department in an active, aggressive national concern. The salesmen are employed by and paid by the dealer. Weekly meetings of the entire organization, including office and yard personnel, truck drivers and salesmen, are held to stimulate sales activity on the part of every employee.

Careful attention is paid to the servicing of each sale with the result that the good will of customers is one of the New Haven Guild's greatest assets. Mr. Matthias reports that approximately half of his leads come through satisfied customers.

The New Haven Housing Guild was formed shortly after Mr. E. Matthias and three of his salesmen had attended a National Housing Guild training school conducted by Johns-Manville.

This "school" and twelve others like it in which more than 1500 dealers and dealer salesmen received a two weeks training in consumer selling and sales management, was the outgrowth of an idea, a plan and years of development and experimental work.

As far back as 1933, Johns-Manville, realizing the need for unifying the various services of the building industry, if an efficient job of merchandising building "packages" were to be done, added to its staff a retail lumber dealer and a contractor, each with more than 25 years of successful experience in their respective fields.

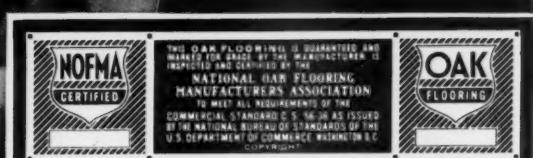
Arthur A. Hood, well known through the industry as a former successful lumber retailer and as a modern merchandiser, originated the Housing Guild plan. The contractor phases of the program and The Estimating Guide, which makes it possible for the salesman to quote a price on his first call in most cases, were developed by G. Meissner, as practical a contractor as ever swung a hammer.

Women vote for Hardwood Floors of OAK by overwhelming majority!

And whoever heard of a home where the woman's vote didn't win every election, no matter what her husband . . . poor fish . . . might nominate?

She may be a bargain hunter at heart, but never for the intimate things which reflect her personality. Her best frocks bear a smart shop label, her hats ditto, her antiques are genuine and her table silver is Sterling. So, she knows all about labels and hallmarks because they banish all doubt as to pedigree, which proves her a judge of good value.

Right there she'll be amazingly responsive to the quality appeal of NOFMA Certified Oak Floors. For NOFMA is the only Oak Flooring bearing the copyrighted label of its makers . . . the warranty mark that certifies guaranteed grades according to the Bureau of Standards, U. S. Department of Commerce. Tell her about NOFMA's label on Oak Floors and you speak the language she knows . . . mention "flooring specifications" and she'll be looking out the window.



THIS LABEL WARRANTS PEDIGREE OAK FLOORS

We've published this useful book in language she'll understand . . . and for you, this Specification Manual, an invaluable Master Work Sheet for specification writing. Your name on the coupon brings your FREE copies pronto! Sign and mail today.

NATIONAL OAK FLOORING MANUFACTURERS' ASS'N
222 Dermon Building, Memphis, Tennessee

Name _____

Address _____

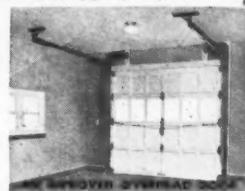
NOFMA OAK FLOORING IS SOLD BY LOCAL DISTRIBUTORS EVERYWHERE

AN ORDINARY OVERHEAD TYPE DOOR HAS
TO HAVE
AT LEAST
1/16"
"CLEARANCE"
This door can't stand
the "Rattle Test"
THAT YOU WON'T FIND ON THE

Barcol OVERdoor

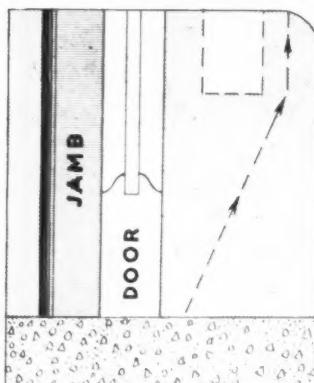
LOOK
FOR

THIS
MARK



This $\frac{1}{16}$ " gap between the door, when closed, and the stop strip (or jamb) MAKES ALL THE DIFFERENCE between a weather-tight, rattleproof door and one that is not.

**OTHER DOORS DO NOT REcede
FROM THE JAMB RAPIDLY
LIKE THE BARCOL OVERdoor**



EXCLUSIVE SHARP ANGLE ACTION
OF BARCOL OVERdoor

When the Barcol OVERdoor opens, it first moves upward and away from the jamb at a sharp ANGLE (see drawing), then goes straight up and over. This EXCLUSIVE action provides a door which operates easily without sticking, yet closes snugly with a weather-tight, rattleproof fit. The ordinary overhead door requires at least $\frac{1}{16}$ " clearance to allow for swelling of the wood sections and to prevent sticking. Such a door can not be weathertight and rattleproof. For durability and complete satisfaction, specify the Barcol OVERdoor — an IMPROVED overhead door.

Weathertight! **Easy Working!**

ELECTRIC OPERATORS
and the
RADIO CONTROL

For swinging, sliding, overhead, and steel rolling doors, and for swinging and sliding gates. Controls include switch control, time control, the "electric eye," and the outstanding RADIO CONTROL. Write for descriptive literature.

BARBER-COLMAN COMPANY • ROCKFORD, ILLINOIS

Letters—

(Continued from page 98)

it or add refinements, no thought was given to redesigning it for mechanical firing or for more convenient operation.

The net cost of our 1937 Heat Extractor Boiler to the heating contractor is 40% less than the cost of the 1926 boiler just described. The 1937 model includes a steel jacket finished in baked enamel, a hot water heating coil, improved shaking mechanism and grate bars, a foot treadle to open the ashpit door, an enclosed damper regulator with radio dial type adjuster at the front of the boiler, ground surfaces between sections, rock wool insulation, extended heating surfaces and tappings for all controls for automatic firing to permit easy and economical conversion to stoker, oil or gas firing. None of these features were provided in the 1926 model.

NATIONAL RADIATOR CORPORATION,

By G. B. Varner, Pub. Dir

* * *

Erroneous Ideas

Pittsburgh, Pa.

To the Editor:

More power to you for your October issue in which we understand you are going to analyze rather exhaustively the matter of building costs as compared to past years.

On every side we in the building business are met with what we believe to be an erroneous idea on the part of the trades people and the laymen concerning building costs. There is very little data available in convenient form to disprove this. I have personally used and with good effect your article from your July issue.

I would appreciate your entering our order for ten additional copies of your October issue so that we may pass these on to our salesmen.

MCKINNEY MANUFACTURING COMPANY,
By H. N. Campbell, Jr., Vice-President.

* * *

Agrees 100%

Minneapolis, Minn.

To the Editor:

Please accept the sincere congratulations of this Association upon your wisdom and farsightedness in inaugurating a program for educating the public that building costs are not high when they consider what they get for what they pay.

Within the entire Building Industry, there is a crying need for education along those very lines.

We agree with you 100% in the articles you have already run and, also, in your plans for carrying out the program in future issues of the *American Builder*. We shall surely be looking forward with great anticipation to your October number.

NORTHWESTERN LUMBERMEN'S ASSOCIATION,
By O. C. Lance, Secy.

* * *

A "Job" for Every Building Industry Man

North Tonawanda, N.Y.

To the Editor:

We want to congratulate you on your timely data regarding the criticisms that building costs are too high. These facts should be widely distributed and a definite drive put on to enlighten the public as to building costs. There is so much said about building costs being high that it has discouraged many who were contemplating building.

WEATHERBEST CORPORATION,
By W. W. Prescott, Asst. Treasurer.

* * *

Sin of 2nd Mortgage

Springfield, Ill.

To the Editor:

May I suggest that in your writings you stress over and over again the fact that a home may be bought today without the sin of a second mortgage.

ILLINOIS LUMBER & MATERIAL DEALERS
ASSN., Inc.

By J. D. McCarthy, Secy.

(Continued to page 152)



**THE TIME IS RIPE FOR
BIG VOLUME WITH BARBER**

AND *The Vital Element*

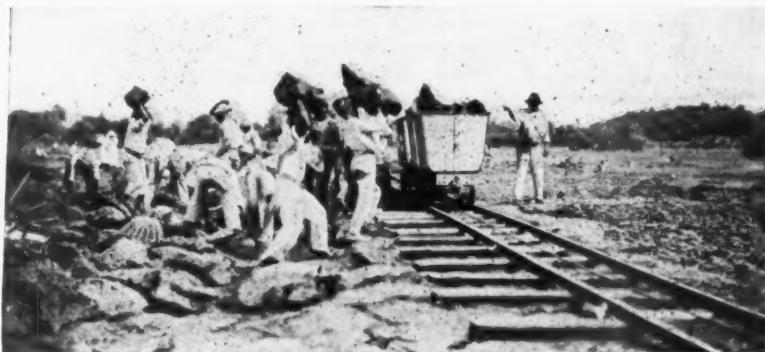
IT HAS been many years since roofing dealers and applicators have been offered the golden opportunity for record-breaking volume that now presents itself. And Barber has prepared the way for every Barber Genasco Dealer and Applicator to cash-in on it — 100%.

Look at the situation! Building and roofing activity are soaring to new highs. Every new structure that goes up needs a new roof. And millions of old structures — large and small — have long passed the stage when their present roofs began to deteriorate. *Every one of them needs a new roof!*

Over six months ago Barber began the most intensive advertising, merchandising and selling campaign in its history. That was only the start of an unceasing pressure behind Barber Genasco Roofings and *The Vital Element* — Trinidad Native Lake Asphalt — an exclusive Barber feature.

Today the public is ready to buy . . . and wants to buy . . . Barber Genasco Roofings. Barber is doing a first-class job. And any dealer or applicator who does a first-class selling job with his customers will

enjoy a bigger volume than he has ever known. Write to Barber now and get the full particulars of our attractive money-making proposition. Do it today—WHILE THE TIME IS RIPE!



THE VITAL ELEMENT

Trinidad Native Lake Asphalt—

The Vital Element — has an inherent vitality that gives superb service in any climate. It is a native asphalt, formed in what is believed to be the crater of an extinct volcano in the southern Caribbean Island of Trinidad. Even millions of years of exposure to sun and rain have failed to crush the natural weatherproofing abilities of *The Vital Element*.

So ideal is Trinidad Native Lake Asphalt for use in roofings that the only necessary refinement consists of driving off the water that is associated with it as it is taken from the Lake. This photograph shows the Trinidad Lake — source of *The Vital Element*.

THE BARBER COMPANY, INC.

PHILADELPHIA

SHINGLES • SIDINGS • ROLL ROOFINGS • BUILT-UP ROOFINGS

ASPHALT HEADQUARTERS
SINCE 1883

PENNSYLVANIA



EXPERT HELP ON HOME HEATING *for Architects and Builders*

Anthracite Industries, Inc. offers many free services which may be of special and practical help.

For example: technical data and actual performance records of approved Anthracite equipment. Here, too, is a vast store of information on heating problems gained through years of research. Back of all this is the accumulated experience of the Anthracite Industry.

You may have personal service, if you wish. Anthracite Industries, Inc. maintains a trained field organization, to help in specific cases.

Through the research and testing laboratory of Anthracite Industries, Inc. you are assured of the correct design and operating efficiency of leading Anthracite equipment. Before any equipment can bear the Industries' seal of approval it must meet the most rigid requirements in the heating field. Thus, through manufacturer's guarantee and the Anthracite Industries' seal, you get double assurance of efficiency.

● Do not hesitate to avail yourself of the help of Anthracite Industries, Inc. It is a non-profit corporation, organized to focus the experience and services of principal factors interested in extending the conveniences and economies of Anthracite in home heating. Write

ANTHRACITE INDUSTRIES, Inc.
Chrysler Building New York City

(SEE ADVERTISEMENT ON OPPOSITE PAGE)

Pennsylvania
ANTHRACITE
COAL

THE SOLID FUEL FOR SOLID COMFORT

Letters—

(Continued from page 150)

"Distinct Benefit"

East Walpole, Mass.

To the Editor:

You are tackling what I believe is one of the most important problems confronting the entire construction industry and its suppliers at the present time, and the results of your efforts should be of distinct benefit to all concerned.

BIRD AND SON,
By B. H. Roberts, President.

* * *

Right Kind of Material

Philadelphia, Penna.

To the Editor:

I have read with a great of interest your letter and information regarding false price thinking with reference to today's home building costs.

This is the kind of material that unquestionably should be put in the hands of everyone connected with the building industry. I agree heartily with what you are doing and can suggest nothing which you apparently have not already done except to offer our cooperation in any way. Certainly we shall advise our members of your efforts and shall be delighted to offer the editorial assistance of THE PLAN furthering this idea. It would be a pleasure to work with you in such a program.

MIDDLE ATLANTIC LUMBERMEN'S ASSOCIATION,
By J. F. Martin, Editor—THE PLAN.

* * *

Trim Costs Down

New York City, N.Y.

To the Editor:

In our own particular line the situation is about as follows: 30 years ago a carpenter received about \$1.50 per day and trimmed one to two windows a day, making a labor cost of about 75c per window. Today we ship a very much better quality of material, which is dried better and manufactured better.

Through prefabrication, the carpenter who now gets \$1.25 to \$1.50 per hour will trim four windows per hour at a net labor cost per window of 37½c. At the same time the factory is paying 65c to 75c per hour, where 25 to 30 years ago they paid from 9c to 15c per hour.

The kind of house that was built 20 to 25 years ago we could build today with the same equipment and conveniences for about 1/3 of the cost.

TRIMPAK CORPORATION,
By H. J. Strong.

* * *

Furnace Prices

Milwaukee, Wis.

To the Editor:

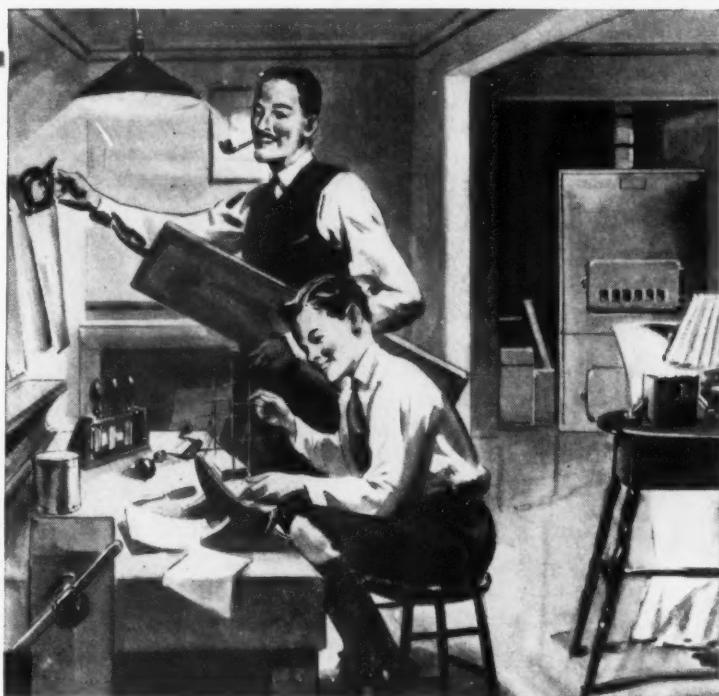
Below we are listing some additional information on Mueller prices, which we dug up at the request of the Milwaukee Journal. Apparently the Journal has responded to the idea which you developed.

In 1920 the Mueller model No. 372 Furnace listed at.....	\$170.00
In 1925 the Mueller model No. 372 Furnace listed at.....	170.00
In 1930 the Mueller model No. 372 Furnace listed at.....	115.00
In 1935 the Mueller model No. 372 Furnace listed at.....	120.00
In 1937 the Mueller model No. 372 Furnace listed at.....	120.00

In comparing the design and construction of the 1937 furnace with its 1920 counterpart, it can be easily shown that the 1937 furnace is a much greater value, since the 1937 furnace has advantages of importance not found in the 1920 job.

L. J. MUELLER FURNACE COMPANY,
By J. H. Gregory, Sales Prom. Mgr.

Have you checked advances and operating economies of AUTOMATIC ANTHRACITE HEATING AND AIR CONDITIONING?



Automatic Anthracite heating permits most modern of basements. A hobby workshop (as shown) or game room, or den, just as the home owner wishes.

Automatic Anthracite heating and air conditioning is the most modern of all. It provides the most recent developments, most recent designs, and unmatched results. It has changed the whole heating picture.

Moreover, when architects and builders are faced with tight budgets, Anthracite-fired equipment comes to the rescue. The range of automatic equipment is so broad that any requirement can be met. You may install a simple Anthracite heater or boiler, with thermostat for automatic heat control. You may install a magazine feed heater. Or you may install an all-season firing and ash disposal system.

Now consider the client. Anthracite equipment is unquestionably

more permanent and more dependable. Anthracite itself offers complete cleanliness, comfort and safety. Its amazing economies are every day experience. More than that, prices of Anthracite are constantly going down, while other fuels are rising.

Architects and builders may have a copy of the bulletin listing approved equipment and ratings. Or, if you wish personal help on any problem affecting Anthracite, feel free to call upon the services of the headquarters staff, or the trained field force of Anthracite Industries, Inc. Write! You incur no obligation at all.

ANTHRACITE INDUSTRIES,
Inc., Chrysler Building, New York.

(SEE ADVERTISEMENT ON OPPOSITE PAGE)

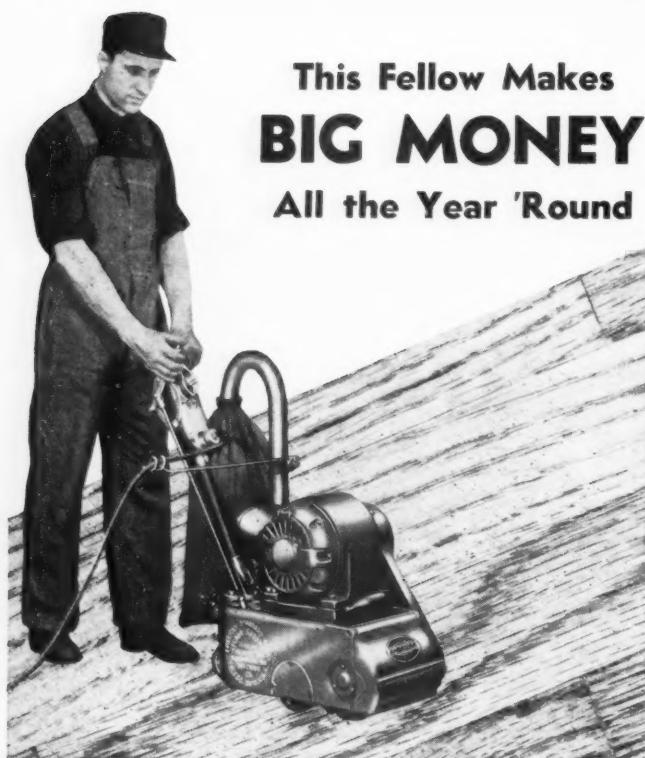
Pennsylvania
ANTHRACITE
COAL

THE SOLID FUEL FOR SOLID COMFORT



• This seal appears on Anthracite equipment only after it has passed the most rigid tests in the heating field.

**This Fellow Makes
BIG MONEY
All the Year 'Round**



AND YOU CAN TOO!

There are no seasonal slumps for this fellow—No Sir! He owns an American floor sander and if building "slows down" a little in the winter, he gets all the work he can handle resurfacing floors in the older homes. "New floors for old" is his motto. He is his own boss and all the profits go into his own pockets.

No experience is required to do floor surfacing work. Within a few hours you can run one as well as an "old timer." Stop working for somebody else on daily wages and start making all the profits for yourself. Own an American sander.

Get complete details, catalog and price without cost or obligation by signing and mailing in the coupon below.

THE AMERICAN
FLOOR SURFACING MACHINE COMPANY
511 So. St. Clair Street, Toledo, Ohio

Gentlemen:
Send complete details, general catalog and prices on your American floor sanders without any cost or obligation to me whatsoever.

Name _____

Street _____

City _____ State _____

News of the Month
Building Activities and Meetings

**August Construction Makes 4% Gain Over
Year Ago; Shows 10% Decrease from July**

THE August record of total construction in the 37 Eastern States as reported by F. W. Dodge Corporation, amounted to \$285,104,100. This contract volume compares with \$275,281,400 for August of last year and with \$321,602,700 for July of this year. Of the August 1937 volume, \$73,448,300 represented residential building, \$117,209,800 non-residential building and \$94,446,000 was for public works and utilities.

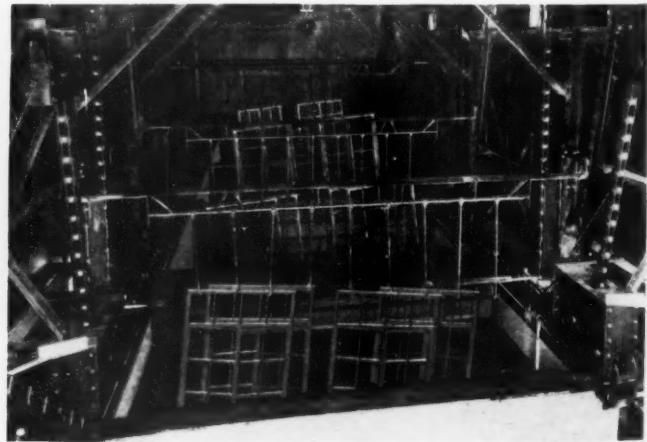
Comment about the August construction total was made as follows: "Approximately two-thirds of the July to August decline in contracts was due to a decrease in the amount of publicly-financed work. In addition, there occurred, also, a drop of more than \$30,000,000 in the total for unusually large projects, jobs costing a million dollars and over and which happened to start during July rather than during August. In spite of these two adverse influences, the August total represented a gain of 4 per cent over last year and a decline of less than 11 per cent from July of this year.

"Disappointment in the August residential building total is not so great as would be indicated by the contract figures. Admittedly, residential contracts fell below the total for the corresponding month of the previous year for the first time during the recovery period, but the August, 1936, record was inflated by public housing amounting to almost \$32,000,000. In the current month's record there was included less than \$1,000,000 of public housing."

**Fenestra Windows Now Improved
Through Use of New Bonderizing Process**

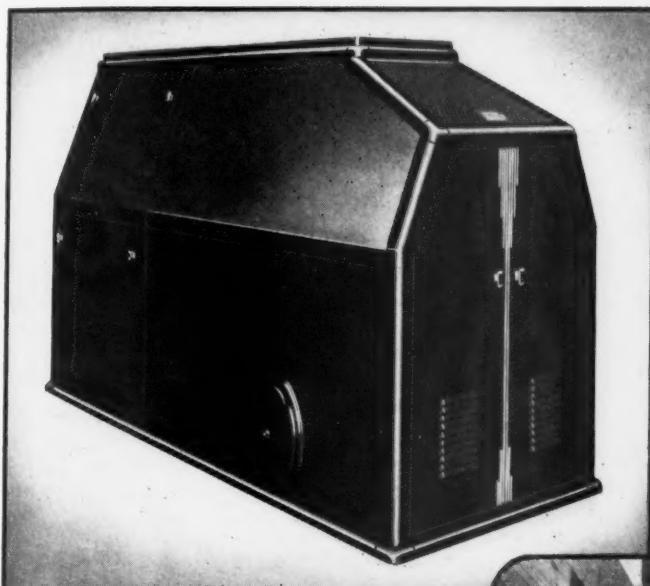
THE recent completion of a new \$200,000 Detroit Steel Products Company plant to be devoted entirely to bonderizing and finishing Fenestra windows marks another basic product improvement of interest to the entire building industry. Bonderizing, which has amply proven its effectiveness in the automotive, refrigerator and other industries, is a new patented process never before applied to steel window manufacture; it provides a rust-inhibiting base and a more positive adhesion for paint finishes. It takes two hours and fifteen minutes to complete the bonderizing of Fenestra steel casements. During this period they travel continually and receive their various treatments as they pass along, two of the stages being shown in the accompanying illustrations.

The first essential is to clean the frames of all oil, grease
(Continued to page 158)



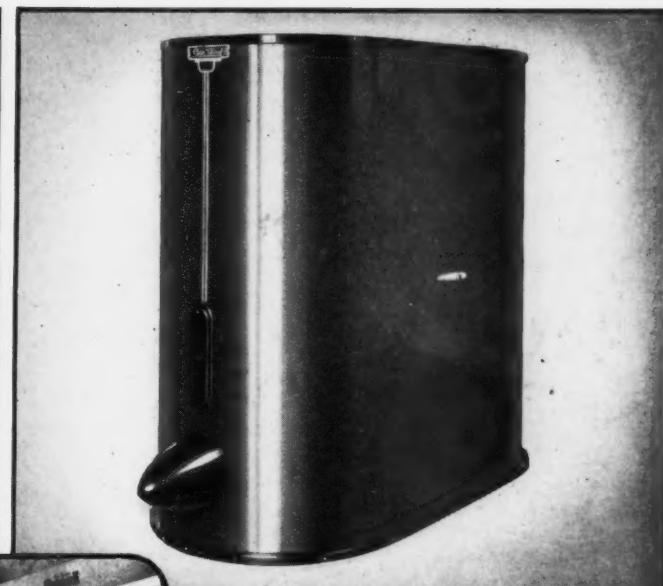
IN THE Bonderizing Process, Fenestra windows are dipped into four separate tanks, each having a capacity of considerably over 7,000 gallons.

Gar Wood PREFERRED MORE THAN ANY OTHER DIRECT-FIRED GENUINE, WINTER AIR CONDITIONING



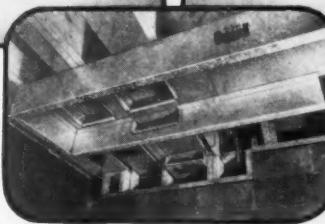
Model 102 Tempered-Aire

● The outstanding sales leader in America, this unit is a performance leader as well. Available in many capacities. Installed with "Air-Dux," it takes the guess work out of winter air conditioning.



Model E.W. Oil Furnace

● Here's the new low-priced unit for low cost homes. It provides automatic oil heating, air filtering, humidifying, and blower circulation in one complete package.



THE SALES RECORD Gar Wood sales of direct-fired air conditioning units out-distanced all others in 1936. That's the record. And it's proof of what people prefer. A great many of those who purchased Gar Wood's are successful builders.

TRIED AND TESTED These builders selected Gar Wood equipment because they wanted a product which had already proved its merit in many thousands of residential installations.

A FAMOUS NAME Gar Wood equipment is built completely by one organization—backed by a nationally known name that is linked with many engineering triumphs.

LONG EXPERIENCE It is the pioneer furnace-burner unit in the residential field—has had longer experience in more homes. Owners everywhere have praised its performance, economy, efficiency, engineering excellence and service.

HONEST VALUE Its features are easily recognized by discerning home buyers. For example, the true heating surfaces on Tempered-Aire units are greater than the average of other makes. Generous heating surface means longer life, higher efficiency, economy and reserve ability to handle overloads.

A COMPLETE LINE There are more sizes and capacities available, so that an efficient installation is assured regardless of the size of the house.

ENGINEERED AIR DUCTS The pre-engineered, pre-fabricated sheet metal "Air-Dux" assures perfect circulation, perfect results and complete owner satisfaction.

SAFEST TO SPECIFY Play safe with heating and air conditioning equipment—specify Gar Wood. An experienced sales and engineering organization is ready to serve you. Write today.

AIR CONDITIONING DIVISION

GAR WOOD INDUSTRIES INC.

7924 RIOPELLE STREET

DETROIT, MICHIGAN

Canadian Distributors: Engineering Industries, Ltd., Leaside, Ont.

A Splendid Witness for the Plaintiff



in the case of
TRUE VS. FALSE PRICE THINKING
so Valiantly Presented
in this Issue of
AMERICAN BUILDER

To the multitude of facts-and-figures selling tools that can be used to offset the effects of destructive cost propaganda provided you in these pages, you can most effectively add this superb Plan Book to demonstrate to your clients the economy and superlative value of today's homes in contrast with offerings of previous years. Every one of its 88 selected Homes bears striking witness to the fact that even in the lower cost brackets you can give "More House for the Money"—more charm, more style, greater convenience, more livability—than would have been thought possible ten years ago.

Chapter by Chapter

See what all it Contains!

Low Cost Homes

Fill the 50 pages of Chapter 1—30 of them in all, including, among others, Charming 5-room Cape Cod Cottage following present trends and with well handled exterior details . . . Sturdy Chicago Colonial, with outline specifications . . . Fire-Safe Bungalow freshly modern in its conception . . . Triple-insulated compact Colonial, surfaced with asbestos siding shingles, giving it a light and cheerful aspect . . . 5-room Cottage for sloping site, with low roof lines, massive stone chimney and good-sized living porch . . . Provincial white painted brick country home-stead . . . Trim face-brick Virginia Colonial . . . "Virginia Lee" Modified Normandy Cottage . . . A group of Kallvinator "Package" homes, in the \$6,000 and under class, showing how careful planning cuts costs . . . Long Island French Provincial Charm . . . Texas Apartment Type Small Home, built to sell at \$1,900 . . . Rochester low cost Colonial, with a fetching recessed fireplace . . . Steel Clad Birmingham Home, with bill of materials . . . Normandy Type Home at Erie . . . Gross-Morton Low Cost Bungalows, with some beautiful interior views . . . First Five

Purdue Test Houses, with outline specifications. And others.

Modern Home Designs

is the title of Chapter 2, in which are featured 12 thoroughly up-to-the-minute homes, including New American Prize Winner at Oak Park, an interesting detail being the method of carrying the wall load above the concrete slab garage ceiling . . . Kalamazoo's Home of Tomorrow, providing for washing, filtering, reheating and recirculating the air . . . Buffalo steel chassis home, with an uncommonly efficient floor plan . . . Concrete Efficiency Home at Cleveland, all electric, basementless, flat roof . . . Triple Insulated Modern Model Home in Kenmore, N. Y. . . Toledo suburban home, modern in line and detail, with sun deck around three sides . . . "Moderne Air Conditioned Home," . . . Westchester Model Home that took a \$15,000 prize, with full details . . . 6-room and garage Stucco Home with modern feeling . . . All Southern Pine Home at Texas Centennial.

MORE ON FOLLOWING PAGE

**"American Builder Guide to Better Homes" is
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with a \$2 for 1 yr., \$3 for 2 yrs. or \$4 for 3 yrs.
American Builder subscription or renewal.

Get YOUR copy by using the form to the right.

Continued from preceding page

Homes of Distinction

Twenty-three of them in the 42 pages of Chapter 3, including English House with massive chimney and studio living room . . . 6-room Colonial for the country, with bookcases over fireplace . . . A Waverly Taylor Norman Model Home . . . Rambling Colonial in brick . . . Dutch Colonial of brick and stone with inner frame of steel . . . Richmond's "Character" Home . . . Denver French Provincial . . . One-level house with curved ceiling . . . California-Monterey Style Electric Home . . . Brick built for two among stately Staten Island trees, without disturbing or damaging them . . .

Florida Tropicals

Fourteen Homes featured in the 14 pages of Chapter 4, among them being the interesting Riviera House, with clean, modern lines and provisions for outdoor living . . . The Florida Directoire . . . Miami Beach House with low-lying, cool, tropical look . . . A popular Spanish Bungalow, one of 300 recently built . . .

Model Home Interiors

are treated in Chapter 5. Nineteen beautiful views forecasting style trends are given of charming Archways, Curved Stairs, Streamlined Kitchens and Baths, Paneled Living Rooms, well-styled Recreation Rooms, Corner Windows, etc.

Better Details

that sell homes by adding to their charm fill Chapter 6—unusual Entrances, attractive Bay Windows, Ornamental Corner Boards for Colonials, Knotty Wood Finish Vertical Boards, Dove-cote and Overhung Gables, Interior Wall Paneling and other architectural details with enormous sales appeal.

For More Than One Family

In Chapter 7 you see an Income Producer at Jackson, Miss. . . An Oak Park Two-Flat in English Style . . . A Chicago Duplex of 22 apartments.

Modernizing

Quaint Dickeyville—"A whole town modernized" . . . Remodeling boosts rents from \$600 to \$11,000 . . . Profits in Veneer Modernizing . . . An \$800 wreck, plus \$4,200 rebuilding, creates home worth \$6,500 . . . And similar magic touches of the restylist make up Chapter 8.

The Basement Question

is discussed in two interest-compelling articles showing up both sides of the moot question, "Basement?" or "No Basement?"

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10-37

Plans for Little Homes

is the title of Chapter 10, which is a perfect riot of Homey Comfort at small cost, suited to either city lot or suburban acreage. Some of the captions are: "Little House, Big Value" . . . "Four-Room, Bath and Garage Spell Design" . . . "Western Style Colonial, with Breakfast Nook and Bed Closet" . . . "Charming 4-room Cottage with Quaint English Lines" . . . "Small, but Oh My" Cottage most cleverly planned . . . "Two Houses, Same Plan" . . . "Home in Two Steps."

"AMERICAN BUILDER Guide to Better Homes"

contains

194 pages

150 Exterior Views

90 Interior Views

315 Plans, Elevations and Groups of Details

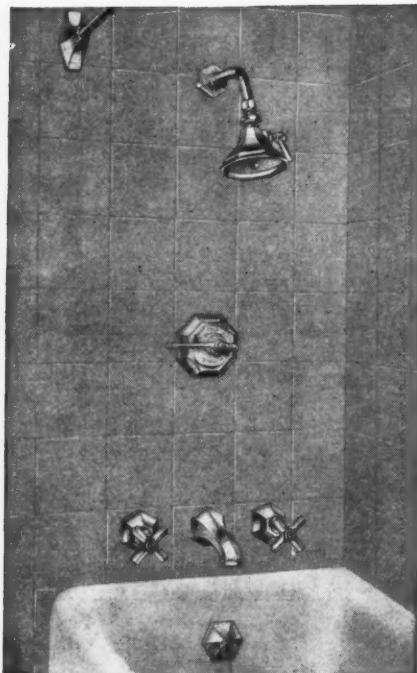
10 Full-page Illustrations, including two
fine Water Colors

Many Outline Specifications and several
Bills of Materials

Every Design has its Cost Key, the use of
which is explained on page 8.

Homes of all sizes, homes of all popular Architectural Types, homes built of all modern materials, homes for city, for suburb and for country-side, many Model and Demonstration Homes. Exteriors and interiors are beautifully photographed. The floor plans are large and well dimensioned. Numerous construction details are accurately presented. More than a Plan Book—a thorough and complete GUIDE to all that goes into the modern home, in every respect closely tying up with the "More House for the Money" message of this number of the American Builder.

(Continued from page 154)



BEAUTY for the woman's favor And for the man's—EFFICIENCY

The pleasing beauty of Speakman fixtures, their graceful lines, and their easy-to-keep-clean, high lustre chromium finish are especially appealing to the modern woman. To her husband, their sturdy quality construction and their never-failing efficient service are the factors that make Speakman his choice.

Far more important than the external beauty of any fixture, is its internal construction. Each Speakman fixture embodies principles of internal design that assure maximum efficiency . . . each is the product of skilled craftsmen—guaranteeing trouble-free service for years to come.

Month after month, national ad-

vertising is telling your prospects the important story of Speakman internal construction and external beauty. In the homes you build, Speakman Showers and Speakman Fixtures on tubs, lavatories and sinks are valuable sales aids. You can cash in on this—without paying any premium for Speakman's quality reputation.

For 67 years the Speakman name has stood for the highest quality. In the complete Speakman line, there are fixtures of many styles and trim—fixtures to fit every need in the bathroom, lavatory, kitchen and laundry—fixtures at every price. Mail the coupon below for free literature.

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Name.....

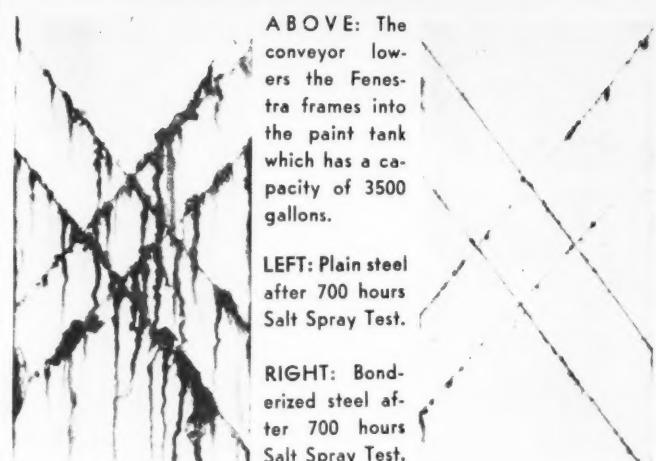
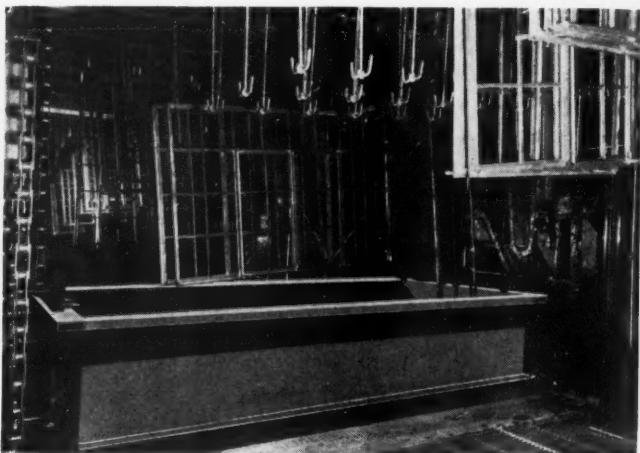
Address.....

City..... State.....

and foreign matter that has accumulated on the surfaces during the fabricating process. To make sure that the Bonderizing process reaches all the inner surfaces and all corners of the frame, the swing leaves are securely locked in an open position. They are then suspended from hooks on a Process Conveyor which carries them through the Cleaning Tunnel where they receive a "hot shower bath."

Next they are ready for a "tub bath" and then the windows are lowered into a third tank of clear cold water where they are cooled for a period of seventy-two seconds.

When the windows are dried and cooled, the frames descend into a vat of paint, and after passing over an inclined drain board they enter a huge baking oven 74 feet long. Their journey through this oven, at over 300 degrees heat, takes 45 minutes. What actually happens in the Bonderizing tank, is this: The normally smooth, metallic surface of the steel window is chemically converted into a non-metallic, phosphorated, crystalline structure "toothed" with millions of microscopic peaks and pits. Later, when paint is applied to this surface, it flows into the crevices between the crystals and is thus "keyed" into the steel.



ABOVE: The conveyor lowers the Fenestra frames into the paint tank which has a capacity of 3500 gallons.

LEFT: Plain steel after 700 hours Salt Spray Test.

RIGHT: Bonderized steel after 700 hours Salt Spray Test.

This process, according to Fenestra engineers, makes Fenestra Steel Windows rust-inhibitive and makes the priming coat last three to five times longer. By providing a tough, durable base coat, the process imparts a property to the surface that improves the appearance and lasting qualities of all finish coats applied later, and guards against creeping alkali erosion between the steel and paint filament.

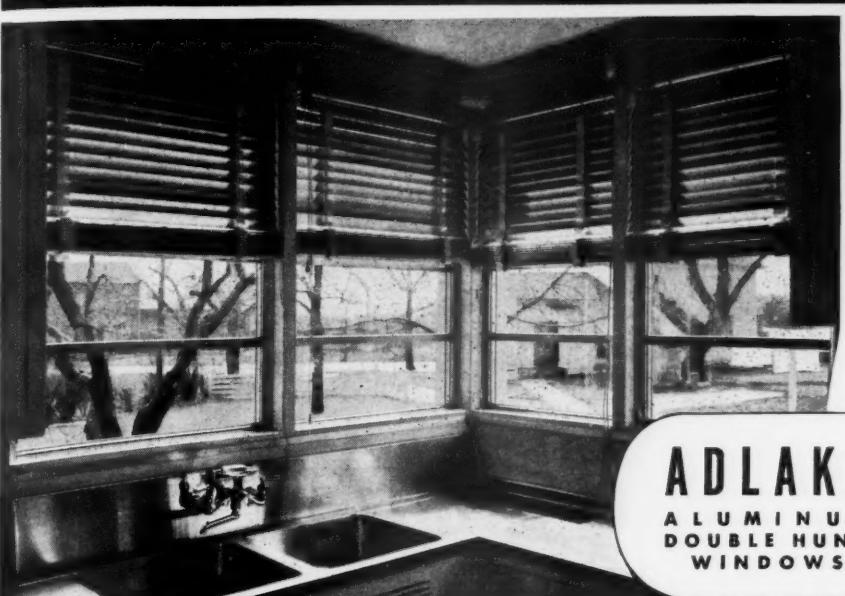
New Edition of Timber Handbook Ready

PUBLICATION of the 13th edition of its Standard Handbook on Timber Construction has been announced by the Southern Pine Association with headquarters in New Orleans. This handbook, which has been the recognized data book on timber design for more than 25 years, has been popular with architects and engineers because of the complete manner in which it covers timber construction and also because of its handy, compact size.

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ALUMINUM DOUBLE HUNG WINDOWS



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For new building and modernizing. Especially valuable in air-conditioning.

Adlake windows are a marked advance in window construction, for efficiency and economy. Write now for complete information; no obligation.

SALESMEN! Desirable territory open for LIVE representatives. Write!

25 YEARS MAKING METAL WINDOWS

2nd Edition

CARPENTRY AND JOINERY WORK

By NELSON L. BURBANK

Formerly Instructor, Building Vocational High School, Cincinnati, Ohio

This text and reference book presents the latest principles of dwelling construction, together with the related studies of drawing, mathematics, English composition, civics, and first aid. The text is thoroughly illustrated with photographs and detail drawings, many of which have appeared in "American Builder and Building Age."

CHAPTER HEADINGS

Tools and Equipment—Tool Boxes—House Plans—Excavations—Foundation Forms—Foundations—Sills—Girders—Floor Joists—Sub-Flooring—Outside Framed Walls—Inside Framed Walls—Plumbing Framed Work—Sheathing Walls—Ceiling Joists—Roof Framing—Roof Sheathing—Cornices—Roofing—Porch and Bay Framing—Exterior Wall Covering—Interior Wall Covering—Stairs—Interior Trim—Windows—Doors—Hardware—Closets and Shelving—Finish Flooring—Finishing.

280 pages, illustrated, 8½ x 11 inches, cloth binding, \$3.00

Money Back if Not Satisfactory

"It covers all the details of house construction, showing the correct methods of framing, building partitions, doors, windows, cornices, etc. While offered as a book for the student or for a carpenter's apprentice, it deals with the subject so completely that it should be of value to the young architect."—Architectural Forum.

Published by **AMERICAN BUILDER** and **BUILDING AGE** 30 Church Street, New York, N.Y.

Practical Estimating Books

The Building Estimator's Reference Book and The Vest-Pocket Estimator

By Frank B. Walker

The Eighth Edition contains new estimating and cost data and describes the materials and methods which have changed building construction in recent years. Tables enable quick and accurate estimating of labor and material quantities from the plans. All estimates are completely itemized so that local material prices and wage scales may be inserted where necessary. How much of a saving can be made with new labor-saving tools and methods over present methods is shown. "The Vest-Pocket Estimator" contains in tabular form material quantities and labor hours for estimating the cost of all classes of building construction.

1937. 8th. 1682 pages, illus., tables, index, $4\frac{1}{2} \times 6\frac{1}{2}$, flexible; 220 pages, $2\frac{1}{2} \times 5$, tables, flexible, \$10.00.

The Carpenter Estimator

By Frank B. Gallagher

Comprises over 1500 authentic labor cost records tabulated from 30,000 actual job costs, compiled in comprehensive schedules under concise headings. A constant basic wage rate of \$1.00 per hour is used so that a simple multiplication changes it to a local wage scale. It covers the carpentry trade from the first stages of framing to the fitting of locks.

1936. 100 pages, tables, $7\frac{1}{2} \times 10$, ring binder, \$10.00.

Estimator of Building Costs

By L. F. Garlinghouse

The author's methods of estimating the cost or the value of residences, apartments and store buildings. Basic prices show three schedule of cost prices on which calculations are based. The detailed square foot method, cubic foot method, short square foot method and short cubic foot method of figuring the cost of constructing a residence are shown.

1937. 2nd. 16 pages, 6×9 , paper, \$3.00.

Estimating Building Costs

By William S. Lowndes

Based upon a correspondence school course in estimating this book explains the procedure step-by-step. Methods of getting approximate cost are explained and then close estimating is discussed. Each part of the work which enters into the figuring is taken up and then an example of a close estimate is worked out.

1934. 313 pages, 66 illus., $5 \times 7\frac{1}{2}$, flexible, \$2.75.

FREE-Book Guide

A copy of the American Builder and Building Age Book Guide describing these and other estimating books along with hundreds of other building books is free upon request.

Book Service Department

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Estimating Building Costs

By Frank E. Barnes

Estimating from foundations to sidewalks is explained in this handbook. All of the principal labor items in each trade have been tabulated and arranged for easy use. The examples given are mostly railroad properties. Tables furnish full data on the costs of replacing various types of existing buildings erected between 1890 and 1923. These may be used in connection with the chapter on "Appraisal of Buildings."

1931. 3rd. 674 pages, 260 illus., $4\frac{1}{2} \times 7$, flexible, \$5.00.

Estimating Building Costs

By Charles F. Dingman

A text book on learning to estimate. It shows how to analyze a construction job, apply cost data adjusted to existing conditions and to make a close estimate. A short cut method of estimating is also explained. Many tables make it a useful tool for the practical estimator.

1931. 2nd. 277 pages, 138 tables, 23 illus., 4×7 , flexible, \$2.50.

New Building Estimator's Handbook

By William Arthur

A good book for the general contractor. Analyzes costs of residences, churches, apartment houses and office buildings, with labor and materials figured chiefly in hours and quantities. All data was taken from cost records of work done in various sections of the country. Where possible the material is arranged in tabular form for quick reference. A 30-page index gives quick access to any subject.

1930. 15th. 1038 pages, 600 tables, 469 illus., 5×7 , flexible, \$6.00.

Estimating Building Costs

By William Arthur

A digest of the author's larger book, designed for beginners and others who desire a less technical and shorter treatment of the subject. It is confined to smaller buildings. All examples are worked out with labor figured at \$1.00 an hour.

1928. 3rd. 211 pages, 91 tables, 20 illus., $4\frac{1}{2} \times 7$, flexible, \$2.00.

BIG JOB MADE EASY

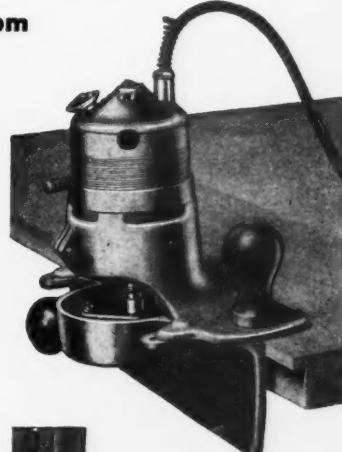
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CARTER ELECTRIC WEATHERSTRIP TOOLS

Weatherstripping is a modern business of undeveloped proportions. It commands a good price—because it has always been a slow, tedious job, difficult to do. Now with Carter Weatherstrip Tools, you can do it easily—more accurately for the same price—and make more money by selling more jobs and completing them in a hurry!

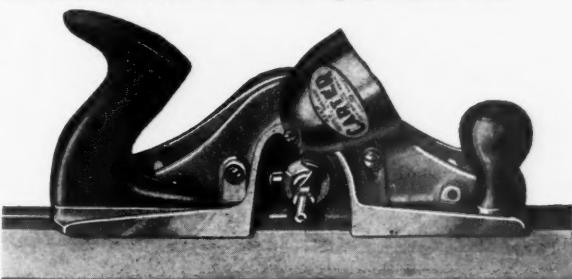
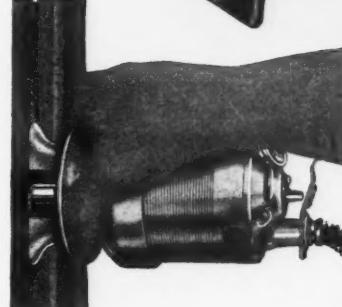
Carter Door Bottom Weatherstrip Groover

Grooves or rabbets door bottoms. Using a 3" saw, it cuts from $\frac{1}{2}$ " to $1\frac{1}{8}$ " deep and is adjustable from flush to $\frac{3}{4}$ " from the face of the door. Powered by a full $\frac{3}{8}$ H.P. Universal motor yet weighs only $4\frac{1}{2}$ lbs.



Carter Electric Kerfing Machine

With one stroke of the hand, it completes a smooth kerfing cut, accurate to a set depth and location. With base removed and cutters applied, it does corner rounding, chamfering and beading, or with a chuck, drills up to $5/32$ " holes in wood. 18,000 R.P.M. direct to the saw assures rapid, finished work.



Carter Electric Weatherstrip Groover

Plows grooves in sash, doors, and transoms. Grinds its own cutters. Full $\frac{3}{8}$ H.P. Universal motor turns up 18,000 R.P.M., the ideal speed for clean cut woodworking that requires no sanding.

Illustrated folder, free. Write today and learn about these profit-making tools.

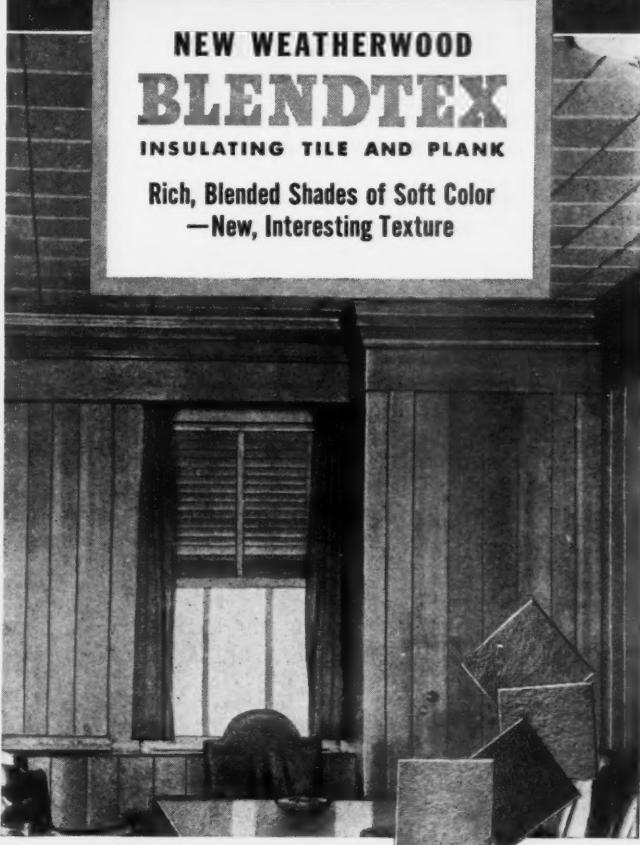
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All With This One Low-Cost Material!

NEW WEATHERWOOD BLENDTEX

INSULATING TILE AND PLANK

Rich, Blended Shades of Soft Color
—New, Interesting Texture



In new construction or old, Weatherwood BLENDTEX decorates—improves acoustics—quiets sound.

■ Here is a quick, economical way to convert basement or attic space into distinctive *modern* rooms or dens...and to build extra value into interiors, new or old.

Use BLENDTEX For These Eight Reasons:

1. Blended shades of harmonious colors combine with a new, interesting texture to add charm and dignity to the interior.
2. Improves acoustics and quiets sound—at the same time insulates against heat and cold.
3. Durable—Special treatment of surface increases resistance to wear—helps preserve and prolong the richness and freshness of colors and texture.
4. Integral colors go clear through the material—not merely a surface application.
5. Predecorated surface saves both time and cost of painting.
6. Adaptable—the wide variety of shapes and sizes gives unlimited scope to expression of individual taste in design.
7. Quickly, easily applied to both new and old walls and ceilings—goes right over old walls.
8. Economical—a popular-priced material. With all its advantages, BLENDTEX costs no more than ordinary  insulating tile and plank.

MAIL COUPON FOR FULL INFORMATION



Showing easy application of BLENDTEX Tile to ceilings, using adhesive.



BLENDTEX Plank is quickly, easily applied to both new and old walls.

UNITED STATES GYPSUM COMPANY
300 West Adams Street, Chicago, Illinois

Please send, without obligation, full information on the new Weatherwood BLENDTEX.

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Address _____

City _____ State _____

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UNITED STATES GYPSUM COMPANY

"JIM, YOUR
HOMES ARE GOING
LIKE HOT CAKES!
WHAT'S THE
SECRET?"

"I'M GIVING
THEM MORE FOR
THEIR MONEY BY
USING REZITED
PLYWOOD."



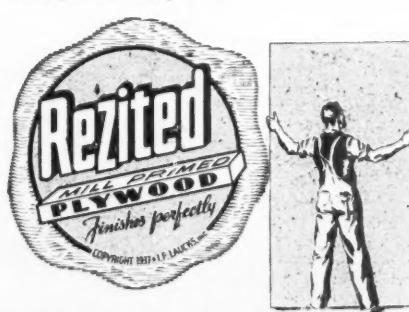
REZITED Fir Plywood

—CUTS FINISHING COSTS
—STOPS GRAIN RAISE
—SAVES VALUABLE TIME
—TAKES ANY FINISH

● You can deliver *more house* today for the same money as yesterday by using REZITED fir plywood!

Your homes will offer better construction, finer wood finishes, and include the "buy-appeals" of built-ins when you use economical new REZITED fir plywood. Pre-primed at the mill, it eliminates a priming coat on the job, requires fewer finishing coats . . . actually *finishes like hardwood*. Add these savings to fir plywood's famous initial economy, the time-saving and low-waste features of its large, strong panels and you have the perfect material for the finest cabinet-work, panel use, etc., throughout a house.

REZITED fir plywood eliminates grain raise, takes *any kind* of finish beautifully, decreases moisture absorption and checking. Lower grade REZITED plywood is ideal for all sheathing and sub-flooring, because it is also fungus and mold resistant. And REZITED plywood for concrete forms lengthens the life of the forms — gives smoother concrete surfaces. Ten million feet sold this year already!



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brand of plywood
"Rezited-at-mill."
At your plywood
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Also
Laux REZ Sealer,
for use on the job.
Sold through
distributors.

L.F. LAUCKS, Inc.
Seattle

"REZITE" MAKES SOFT WOOD
FINISH LIKE HARDWOOD

News Briefs—

PAYNE Furnace & Supply Co., Inc., Los Angeles, Cal., has purchased the Electrogas Furnace & Manufacturing Co., San Francisco. Construction of 12,000 square feet of additional factory space is being started. The subsidiary will operate as the Electrogas Division of the Payne Furnace & Supply Co., Inc. Its production and merchandising policies will be consistent with those established by the parent company. Don C. Fleming is general manager.

NORGE Division, Borg-Warner Corporation, has advanced John H. Knapp to the position of assistant to the president, where he will have more general management responsibility over Norge activities. Paul Zimmerman, for 25 years with the General Electric Company, has been appointed vice-president in charge of sales for Norge. Mr. Zimmerman is widely known in the appliance field, and as an originator of merchandising ideas.

BRIGGS Manufacturing Co., Detroit, has appointed W. F. B. Henderson, general manager of the Briggs Plumbing Ware Division, and has announced a new sales policy on Beautyware, whereby prices will be equalized on a nationally uniform delivered basis. Mr. Henderson formerly was assistant general manager. He is an experienced production manager, knows manufacturing intimately, and is widely acquainted in the industry. R. B. Jenkins, former southern sales manager, has been named director of sales.



W. F. B. HENDERSON

ATTORNEY William E. Russell, New York City, a trustee of the \$24,000,000 Series C-2 issue of the New York Title and Mortgage Company, is one of four managers appointed to re-organize the \$350,000,000 Lawyers Mortgage Co., of New York City.

More Value in Commercial Buildings

(Continued from page 142)

that plywoods formerly offered for building were only partially waterproof. Today fine plywood, as exemplified by the company's Duraply, is made with a resin adhesive that is absolutely waterproof, and because of improved machinery and methods, panels on special orders can be obtained almost twice as fast as in 1926. Today's price is about the same, but quality is considerably higher.

Porcelain enamels on Armco Iron, made by the American Rolling Mill Company, are offered in a wide range of colors, with Pyramid snap-on mouldings to hold the sheets in place. They present a permanent, weather-proof surface, in attractive modern effects.

Insulux glass block, described as the world's most versatile material, made by the Owens-Illinois Glass Co., backed by illumination, has produced many striking effects in modern commercial buildings, as well as in other types of structures.

Contented merchants transact business in modern commercial buildings that have been made more valuable through the development of colorful, enduring, attractive building products.



You're Hollering Down The Wrong Rain Barrel

Sez *Hank*

Gadamighty, man, what's a-eating you? What's all this hollering your allowing folks to get away with about building costs being so al-fired high, and allowing 'em to run to cover like scat rabbits?

Here and there and now and agin, some costs are higher. But even so, you can give them a lot more house for their money than they used to get.

And when it comes to heating contraptions you got the old costs clean skinned a mile. That is to say, you have, if you are smart enough to use Burnham's equipment, that gives more heat—a whole lot of it—for less burning of fuel.

So even if it cost the same as it useter, it costs less to run. Which is the same as saying it cost less at the start. Furthermore, you can get Burnham Air Conditioning by just adding a small bit more to the cost. Get it too, and not take up even an inch more of basement space, or clutter it up any at all with ducts and contraptions. It means that folks can by using a Burnham, with its good-looking cabinet-made jacketed boiler, have their basements become extra rooms. And that ain't maybe. And by the jumping John Rogers, if you have the old stub of a lead pencil handy, you can show 'em, they are honest Injun getting more. But you can't do it sittin' in a rocking chair a-crying down your back or going out to the corner and hollering down a rain barrel.

Hank Hindle

Burnham Boiler Corporation

Manufacturers of Heating Equipment Since 1873
IRVINGTON, NEW YORK ZANESVILLE, OHIO

Burnham Boiler

GENUINE MASONITE INSULATION SERVES



- Genuine MASONITE INSULATION, of course, is an insulation board . . . and an efficient one too. It will perform as well or better than any other insulation board of its type, since it contains the right number of dead air-cells to make a definite barrier against extremes of heat and cold.
- But Genuine MASONITE INSULATION serves a second purpose. It provides beautiful, modern surfaces that can be used for *interior* walls and ceilings as well as for sheathing. No additional finishing is necessary. If you wish, you can plan modern designs, beveled or V-grooved in its grainless surface. Or you can sand certain parts to achieve a smart two-tone effect.
- And — Genuine MASONITE INSULATION offers your clients still a third advantage . . . sound-deadening. Actual scientific tests show that a room with MASONITE INSULATION walls and ceilings is a quieter, more pleasant, more comfortable place because many harsh, annoying sounds are minimized.
- Why not offer your clients the threefold benefits of Genuine MASONITE INSULATION? Write today for free sample and complete information.



MASONITE INSULATION ceiling, grooved in block pattern and painted white for this smart, restful dining-room. Walls are MASONITE INSULATION, painted cobalt blue with horizontal ash strips to match blond maple furniture.

GENUINE MASONITE

THE WONDER WOOD OF A THOUSAND USES

A Mississippi Product

SOLD BY LUMBER DEALERS EVERYWHERE



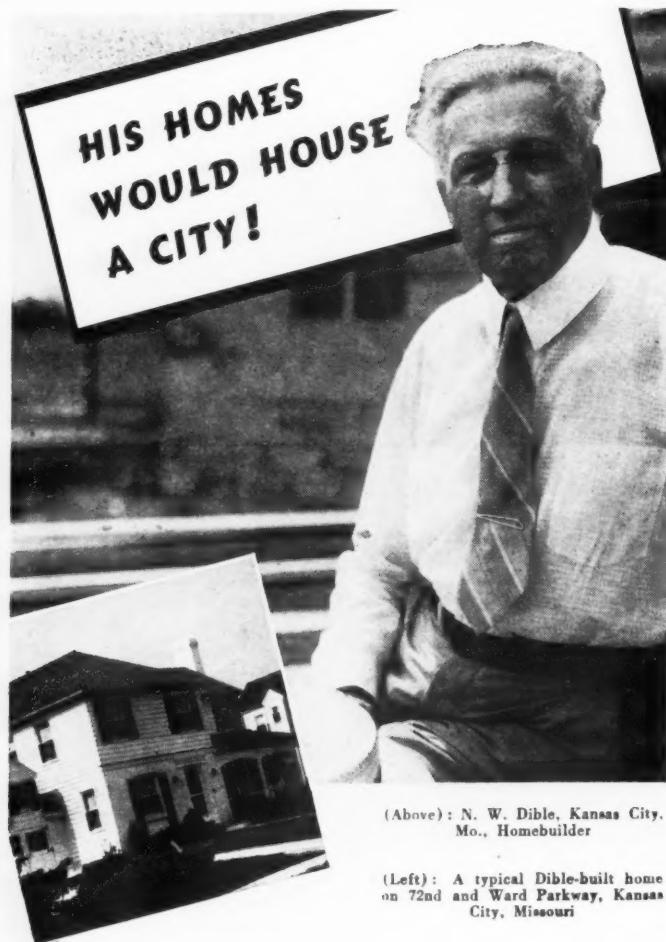
MASONITE CORPORATION, Dept. AB-10
111 W. Washington St., Chicago, Ill.

Please send me FREE sample and more information about Genuine MASONITE INSULATION — the three-purpose insulating board.

Name _____

Address _____

City _____ State _____



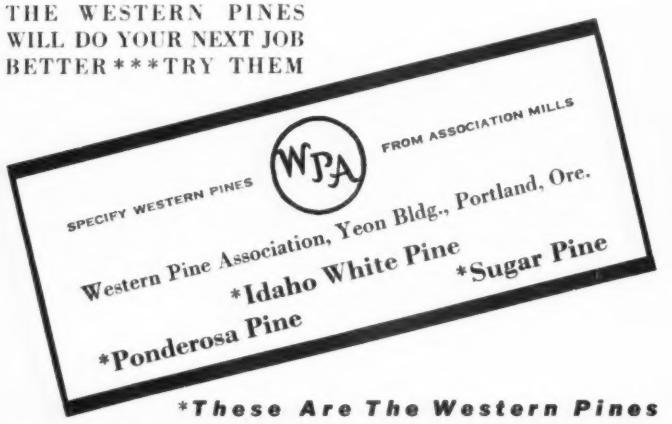
(Above): N. W. Dible, Kansas City, Mo., Homebuilder

(Left): A typical Dible-built home on 72nd and Ward Parkway, Kansas City, Missouri

Meet a man who has built more than three thousand homes—a good sized city by themselves—Mr. N. W. Dible of Kansas City, Missouri. He's had experience by the block-full and he's found it pays to use the Western Pines for framing, sheathing, sash, doors, inside trim, cabinets, knotty paneling.

Mr. Dible says: "I like the Western Pines because they are always available in the right grades and sizes, always properly seasoned, always work well, and give years of dependable service after I've turned a home over to its new owner. Just as long as I am building, I expect I'll always use them."

THE WESTERN PINES
WILL DO YOUR NEXT JOB
BETTER ***TRY THEM



Scientific Methods Reduce Costs

(Continued from page 93)

standardization of duct work, radiator enclosures and heating equipment generally, the operative builder who plans the work more carefully is able to eliminate a large item of expense that was formerly caused by cutting, patching and finishing.

Another important item in the cost of the house, pointed out by Lay, is the extensive use of authentic stock designs in wood-work and trim. Mantels, doors, window frames and sash, steel parts, built-in cabinets and other types of millwork that were formerly laboriously and expensively constructed on the job are now factory built—and the factory produced product is of high architectural merit and superior quality.

Further economies in the use of trim are being developed by Lay and other skillful builders. Lay uses a combination base and base mould—one piece instead of two. Where chair rails are required, a combination one piece is used representing a saving in cost per lineal foot of at least 3 cents. A type of picture moulding has been developed that does not need to be coped on the job. Trim around doors and windows has been much simplified, and there is a growing tendency to use pre-cut packaged products that are mitred in the factory.

All of these items, which are the result of constant study, analysis—and *experience*, are contributing to the lower costs and high values of the 1937 home. The uninformed person who blindly mouths phrases about high costs usually is not aware of the progress that has been made. Nevertheless, from foundation to attic, and from the laying out of the first street to the planting of the last tree, the building of houses for sale has shown a tremendous forward march of progress in the past decade. If the public can be made more fully aware of this progress, there will be less talk of "high costs" and more talk and more appreciation of "high values" of the 1937 home.

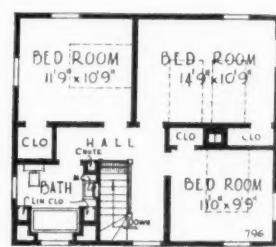
Then and Now in Floor Plans

(Continued from pages 72-73)

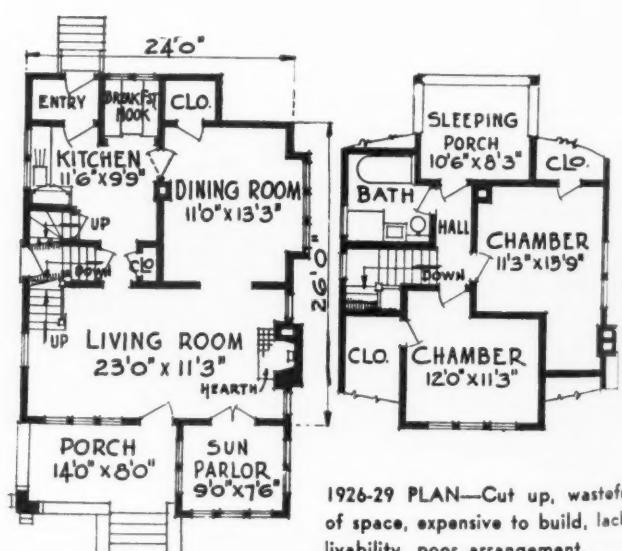
THE 1937 PLAN is compact, convenient, efficient. In less space it has more rooms and conveniences.



FIRST FLOOR PLAN



SECOND FLOOR PLAN



1926-29 PLAN—Cut up, wasteful of space, expensive to build, lacks livability, poor arrangement.

BACKGROUND OF QUALITY!

Walker-Turner Co., Inc., offers this new tool as proof that *precision* small machines can be built at a low price. Building small power tools only, we have spent years in intensive small tool research, engineering and production. You can safely buy this tool and expect a full measure of accuracy and long service for a low price.

\$240⁰⁰
Including 1 H.P. and
1/2 H.P. motors, 110-220
Volts, A.C., 60 cycle.

**In One Compact,
Precision, Easily
Portable Tool**

Useful! IN YOUR SHOP OR ON THE JOB!

Here is a machine that will handle so many of the woodworking jobs connected with building—and handle them so fast and so well—that you should give it your fullest consideration. The 10" Tilting Arbor Saw cuts full 3" depth, makes angle cuts to 45° through rough 2" stock. The heavy arbor swings easily—the big table is always horizontal. The 6" Jointer makes 12,000 cuts per minute—leaves smooth surfaces—and handles all sizes of lumber used in common construction. Both tools are precision ball bearing equipped.

This combination makes it possible for you to make angle cuts in rafters; to plane strips down to ribbon thickness; and do all types of common planing and sawing jobs quickly *in the shop or at the job*. It is the equivalent of a sawmill and planing mill combined in one safe, easily portable machine. Can be supplied with 8" Tilting Arbor Saw at \$202.70, with 3/4 H.P. and 1/2 H.P. motors, 110-220 Volts, A.C., 60 cycle. Ask your Walker-Turner dealer for demonstration, or send the coupon. Walker-Turner Co., Inc., Plainfield, N. J.

WALKER-TURNER Engineered POWER TOOLS

Walker-Turner Co., Inc.
10107 Berkman St.,
Plainfield, N. J.

Send complete literature on your new
Combination Saw and Jointer.

Name _____

Address _____



PERMATITES

These new patented WEATHERTIGHT WINDOWS

Bronze or Aluminum

CUT FUEL COSTS • • • HELP SELL HOMES

Today, house buyers invariably ask about insulation. Leaky windows reduce the efficiency of insulation. That's one of the major reasons why the new, patented features of Permatite Windows help to make houses more salable.

Permatite Windows, both casement and double hung, stop window drafts. The built-in, metal weatherstripping forms a virtually airtight seal. No cold air seeps in, no heat seeps out. Consequently, less fuel is needed. This feature also keeps out moisture, dust and dirt—and prevents annoying rattles.

These fine windows, in bronze or aluminum, have other sales advantages. They operate with ease, yet will not warp, stick or rust. No paint is required. Maintenance costs are negligible. Permatite Windows are remarkably simple to handle and install.

Whether you are building expensive or moderate cost residences, it will pay you to investigate the advantages of Permatite Windows. They are now available at a moderate price that is lower than ever. Before planning your next job, send for free illustrated literature. Mail the coupon today.

Send for fully illustrated Booklet—FREE

PERMATITE W I N D O W S

Bronze or Aluminum • Casement or Double Hung

GENERAL BRONZE CORPORATION
34-19 Tenth Street, Long Island City, N.Y.

Send us FREE illustrated literature on Permatite Windows.

Name _____

Address _____

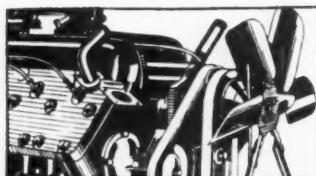
**SPECIFY
the BEST**

MCKINNEY
Oilite Bearing
BUTT HINGES

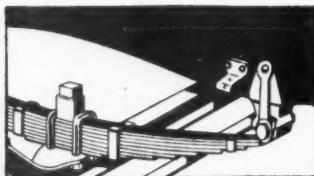
PATENT APPLIED FOR

The modern hinges that can never squeak at the joints because they are equipped with Oilite Bearings, that remarkable oil-impregnated metal, combining durability with smoothness and silence of a self-oiling composition. Oilite or ball bearing equipped Butts optional at same price. Write for data.

MCKINNEY MANUFACTURING COMPANY, PITTSBURGH, PA.



Water pumps can't wear it out—Heat . . . abrasion . . . speed cannot wear out Oilite Bearings.



Self lubricating Oilite prevents squeaks. That is why McKinney Oilite Bearing Butt Hinges will never squeak at joints.



Clutch Bearings can't break it down. They require a self-lubricating non-wearing bearing . . . and Oilite stands up. For the same reason Oilite bearings stand up in butt hinges.



High frequency doors function perfectly twice as long when equipped with McKinney Oilite Bearing Butt Hinges. Tests indicate that 2 million cycles and more are to be expected.

PERFECT ALIGNMENT

Oilite Bearings used in McKinney Butt Hinges are absolutely uniform in composition presenting wear resisting surface over long periods, and therefore perfect alignment throughout the life of the hinge.

ABSOLUTE QUIETNESS

Oilite Bearings in McKinney Butt Hinges are made to give a lifetime of quiet service. Unique composition of Oilite assures smooth, frictionless hinge action.

AGELESS ENDURANCE

Graphite composition of the Oilite bearings in McKinney Butt Hinges eliminates friction and wear making them outlast any other hinges including ball bearing equipped Butts.

Nation-Wide Campaign

(Continued from page 75)

than high costs. Enlist the help of the chamber of commerce; encourage speeches before local luncheon clubs and public gatherings. The comparisons of the 1937 home with the 1926-29 home can be made dramatically by constructing model houses which can be displayed in public spots. Photographic displays with enlarged pictures showing a typical 1926 house and contrasting it with the house of today can be used effectively.

American Builder has found that building industry men themselves are not aware of the vast improvements and developments for the better that have taken place in home construction. Many of the changes have come about gradually, and others have been taken as a matter of course, when actually they are far-reaching and of the greatest importance. As a result of decreased land cost, lower long-term financing costs and far-reaching technical improvements in products and methods that go into the new house, the complete structure of today is not only vastly superior to that of 1926 and 1929 but costs much less and can be financed on more favorable terms. When the multitude of improvements and valuable new devices and equipment included in the modern home, are fully appreciated, the only reaction possible is one of surprise that the cost today is not higher.

To support local building groups and provide immediate practical information and facts, this special issue of *American Builder* is being given the widest distribution. In addition to the more than 70,000 regular subscribers, it is being placed in the hands of leading newspaper publishers, chambers of commerce, building congresses and conferences, trade associations, and many persons and institutions concerned with the welfare of building. Large manufacturing firms have placed orders for thousands of additional copies for the use of their salesmen, and for distribution to customers. The total distribution of the issue is approximately 85,000. In addition, more than 2,000 newspapers are being sent extracts from leading articles. It is hoped that many publishers will take up this battle in the interest of the welfare of the building industry, and bring out special real estate or building sections. Operative builders and many contractor builders are adopting this theme as the principal subject of their display advertising.

If everyone of the 85,000 persons who read this issue will endeavor to place the facts it contains before his friends, prospects and business associates and will enthusiastically talk about high home values rather than costs, the trend of public thinking on this vital subject will be changed. Such a change in public sentiment will have a far-reaching effect, not only on the building industry but on the entire business system.

Suggested Articles for Your Local Newspaper

The following newspaper story has been written to suggest how readers of the *American Builder* can go about getting the right kind of publicity in their local papers. Fill in the blanks where indicated, type the story out double space on 8 1/2 x 11 inch paper, take it down to the local editor yourself.

HOME TOWN CITY, N. Y.—Oct.—A survey of home building costs released yesterday by of the company shows the cost of a complete home in this town compared with 1926 or 1929 is most reasonable.

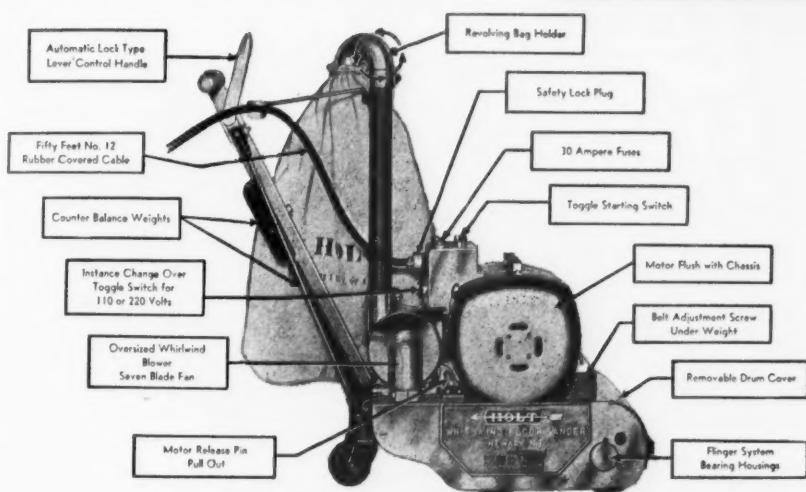
A distorted notion of the expensiveness of home building has grown up from publicity given the rise of a few building materials, he declared. Actually, the cost of building and owning a home today is much less than it was in the 1925-29 era, and in addition, the new houses represent extraordinarily high values in equipment and modern devices, such as air conditioning and insulation.

Quoting facts and figures assembled by the editors of *American Builder*, a business magazine of the building field, Mr. points out that the 1937 home, like the 1937 automobile, is a far better product due to technical advances.

"Our 1937 home shows just as much improvement over 1926 as today's V-8 is an improvement over the old Model T," he

(Continued to page 174)

FOURTEEN REASONS WHY



SPL 12 and MPL 8

Note: SPL 12 equals 12" machine—MPL 8 equals 8" machine.



HARDWOOD FLOORING and MANUFACTURING CO.
606 Bergen St. Newark, N. J.

Distributors in all important cities

The Most Complete Line of Floor Sanding, Maintenance, Nailing and
Edging Machines.

WRITE FOR LITERATURE AND CATALOGUE.

The NEW HOLT MASTER PROFESSIONAL LEVER 8 AND LEVER 12

is becoming indispensable to more and more progressive, profit-making floor contractors.

A FIFTEENTH reason, not illustrated here but readily apparent as this machine is used, is the in-built Holt quality that makes every Holt machine really as good as it looks!

For complete specifications and information about how easily you can put this better machine to work for you, fill out the coupon below. It will only take a moment—DO IT NOW!

HOLT HARDWOOD FLOORING & MFG. CO.
606 Bergen St., Newark, N. J.

Without obligation, please tell me how I can own a Holt Master Professional Lever 8, after a FREE TRIAL, on your EASY PAYMENT plan.

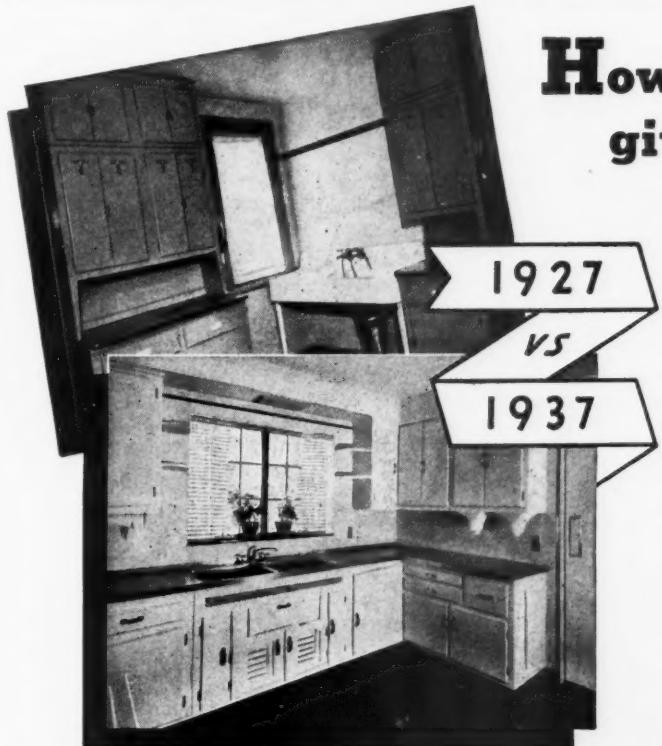
Name

Address

Business

City and State.....

A.B.



**How much more Kitchen Maid
gives you today —
and prices are no higher!**

Ten years ago people were not so exacting. But today they are quality-wise. They have time to consider and compare. They demand the best. And today Kitchen Maid helps you meet this demand in kitchen planning with better cabinetry than ever before. Best of all, prices are *no* higher.

Because of time-tested wood construction, Kitchen Maid units are sturdy, flexible and easy to install. Today all are modern in design...with flush panels, dust-proof doors and drawer fronts. And many standard convenience features help you solve practically every 1937 problem. Cabinetry has enamel finish, sprayed on at factory, in choice of 12 attractive colors. Catalog in SWEET'S. Free Planning Department available.

THE KITCHEN MAID CORPORATION, ANDREWS, INDIANA

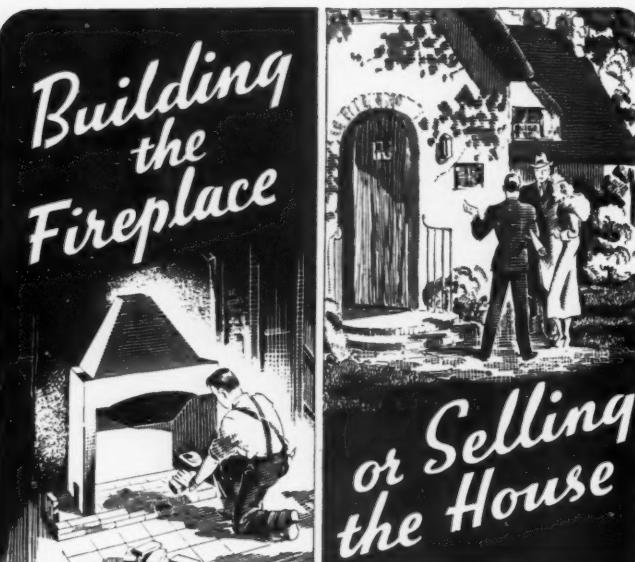
The Kitchen Maid Corp., 710 Snowden Street, Andrews, Indiana
Send new catalog and latest details on standard unit Kitchen Cabinetry.

NAME _____

ADDRESS _____

Architect Builder Owner Dealer





the HEATILATOR FIREPLACE makes Both jobs easier

Purchasers of homes are quickly impressed by the comfort and economy features of the Heatilator Fireplace. It gives them circulated heat that warms every corner of the room and even adjoining rooms. And it eliminates the need for wasteful furnace fires on cool spring and fall days—cutting dollars off the fuel bill.

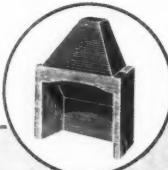
Will Not Smoke

The Heatilator is a double-walled steel heating chamber around which any style fireplace can be built. It provides a correctly proportioned form for the masonry, assuring smokeless operation and proper draft. More—it saves materials and labor for the builder. The firebox, damper, smoke-dome and down-draft shelf are all built-in parts—all properly placed, ready to install.

Prospects Know the Heatilator

Years of national advertising have made the Heatilator Fireplace widely known. Used in thousands of homes and camps everywhere. It is a *proved success*—not an untried experiment.

Get complete Heatilator details and prices before you build another fireplace. Mail the coupon.



HEATILATOR COMPANY
758 E. Brighton Ave., Syracuse, N. Y.

Please send me complete details and prices on Heatilator Fireplace.

Name _____

Address _____

City _____

State _____

Heatilator Fireplace

Nation-Wide Campaign

(Continued from page 170)

declared. He points out that as a result of decreased land cost, lower long-term financing costs and far-reaching technical improvements in products and methods, the house of today is far better and costs much less.

"Of course, home building costs have risen from the panic lows of the depression," he declared. "But so has practically everything else—stocks, bonds, cotton, wheat, lamb chops and 'most everything you buy."

Studies conducted by the *American Builder* show the interesting fact that homes are nearly always bought on a rising market. When costs are abnormally low, as they were a few years back in the deep, dark days of the depression, no one did any buying. But when business is expanding and incomes, rents and prices going up, that is the time people buy.

"We are in the early stages of just such a recovery era now," declares..... "I see no prospect that material and labor costs can or will go down. There is much to make me believe they will go up still more. There is every reason why people should build now. Our local builders are giving more house for the money than ever before. My advice is: Don't be misled by false or misleading propaganda about high costs. The cost of a home in..... today is very reasonable and in line with other costs. And due to the technical advances in insulation, heating, and sound construction, the homes we are building today are much more economical to own and operate."

Savings in Financing Costs

(Continued from page 78)

monthly amortized mortgage.

Today's improved conditions are not limited to any one section of the country, nor to any one type of financing. Many examples could be cited but one will suffice. This is the present-day practice of The Dime Savings Bank of Brooklyn, as offered in five different borrowing plans which are listed below:

PLAN NUMBER ONE: The mortgage is made for three or five years, but renewal is assured without any fee or bonus.

The principal is amortized by moderate quarterly payments.

The interest is payable quarterly, in decreasing amounts, because the principal is being reduced every three months.

PLAN NUMBER TWO: The mortgage is made for a long period (up to twenty years).

The loan is amortized by level monthly payments on account of principal, calculated to wipe out the debt in a given time.

The interest payments are monthly in decreasing amounts as the principal is reduced.

PLAN NUMBER THREE: The principal is amortized by level monthly payments which include interest.

The payments are calculated to wipe out any debt in a given number of years.

PLAN NUMBER FOUR: This is a flexible plan providing for payments each month of a certain amount per thousand dollars borrowed.

The period required for complete liquidation of the loan depends, of course, on the amount per thousand paid monthly.

PLAN NUMBER FIVE, FHA INSURED MORTGAGES: These mortgages are made for terms up to twenty years and for amounts up to 80 per cent of the appraised value of the property. These mortgages are insured by the Federal Housing Administration and the owner pays a charge of $\frac{1}{2}$ per cent per year of the original amount of the mortgage for this insurance. The interest rate is 5 per cent.

Payments are made each month for an amount sufficient to pay interest, taxes, fire insurance, FHA insurance premium and amortization calculated to retire the entire principal of the mortgage during the term. FHA must approve of and appraise the property and approve the credit risk of the owner. The charge is \$3.00 per thousand for this. (Minimum \$10).

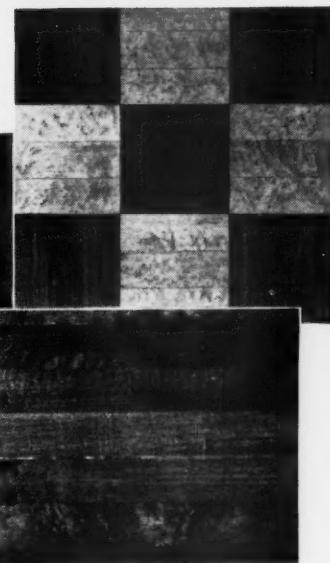
The foregoing data should provide a selling tool for builders and salesmen who are now being confronted with the rising price bogey. Reduced financing costs are a big factor in allowing the builder to give more house for the money today.

MORE MAPLE FLOORING For your money

Two illustrations of Northern Hard Maple (also Birch) blocks laid in mastic over concrete.



Blocks are also easily nailed or applied in mastic to soft-wood sub-floor.



1937 offers you greater satisfaction and dependability than were ever available before—at a cost less than other years.

Here are the facts for *genuine* Northern Hard Maple:

LOWER PRICES—The average price realized for Maple Flooring, f.o.b. mill, for the first six months of 1937, is 7.1% under the first six months of 1930; 3.8% less than 1926; and less than half the average price for 1920.

GREATER VERSATILITY—Northern Hard Maple is now quickly available for laying in herringbone and block patterns, providing a choice of a great variety of pattern combinations for interesting effect.

Also available now are many good color (or natural) finishes permitting endless varieties of color scheme and design to match any decorative effect.

MAINTENANCE SIMPLIFIED—The new, penetrating heavy-duty finishes seal Hard Maple's surface, keep out dirt, resist soil stains, eliminate costly scrubbing. They will not mar, scratch, or flake off, are non-slippery, and can be renewed without removing the old finish.

With the added advantage of finer equipment for sanding and finish maintenance, the upkeep of Hard Maple has become simple, easy routine, and maintenance costs have been reduced to a new low. As a result, when you floor with *Northern Hard Maple today, you are receiving better value than ever before.

MAPLE FLOORING MANUFACTURERS ASSOCIATION

1781 McCormick Building, Chicago

See our catalog data in Sweet's, Sec. 17/66. Our Service and Research Department will gladly assist you with your flooring problems. Write us.

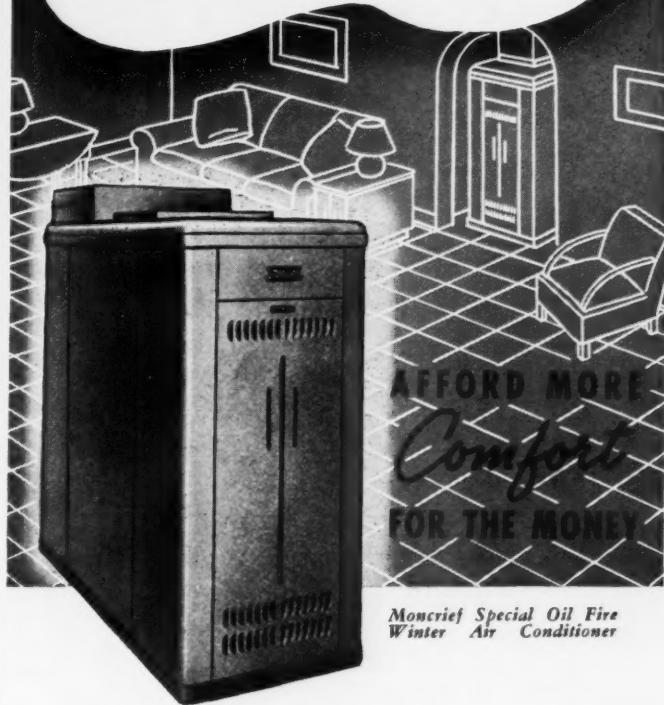
Floor with Maple

* **M F M A**—This trade-mark on Maple Flooring guarantees that it conforms to the exacting grade standards of the Maple Flooring Manufacturers Association. It protects you against species substitution and inferior grade. It assures you of *genuine* Northern Hard Maple. Look for it on the flooring you buy.

• NORTHERN HARD MAPLE •
is the Longest-Wearing Comfortable Floor



MONCRIEF Winter AIR CONDITIONERS



Moncrief Special Oil Fire
Winter Air Conditioner

THE home owner gets far more than he pays for in Moncrief Air Conditioning. Consider the livable room made available in the basement by the clean, convenient and handsomely styled, beautifully finished Moncrief Air Conditioner—using either gas, oil or coal. There is a specially designed type for each fuel.

And the operating economy of Moncrief Winter Air Conditioners is unexcelled and seldom equalled. Their first cost is extremely moderate, affording big value.

Builders find in the complete Moncrief line a type and a size for every air conditioning need. Get in touch with the Moncrief dealer in your neighborhood.

Send for new descriptive literature.

THE HENRY FURNACE & FOUNDRY CO.
3479 E. 49th STREET • CLEVELAND, OHIO

MONCRIEF
Engineering Service
is freely available
for estimating
and laying out
plans.

IT'S foolish to think of building a home today without an electric kitchen ventilator. Women, everywhere, are anxious to eliminate cooking odors, greasy fumes and smoke from their homes. Victor In-Bilt Ventilators fully meet this demand and there's a Victor model for every type of home. Regardless of the size, kind of construction or cost—you will find that Victor has just the ventilator you need.

A GREAT SALES AID

A Victor In-Bilt Ventilator will give any home more sales appeal than many other features costing many times its low price. Remember, kitchens sell homes and Victor Ventilators sell kitchens. That's why you should send today for complete information on Victor's complete line of In-Bilt Electric Ventilators. Mail coupon now!



FREE!

This folder gives you complete specifications, installation instructions and explains all the important features of Victor's In-Bilt Ventilators—mail the coupon for your copy now!

VICTOR ELECTRIC PRODUCTS, INC.
793 Reading Road
Cincinnati, Ohio

MAIL THIS COUPON TODAY!

VICTOR ELECTRIC PRODUCTS, INC.
793 Reading Road, Cincinnati, Ohio
Please send me your Bulletin No. 905-C which gives complete information on Victor In-Bilt Ventilators.

Name _____

Address _____

Town _____ State _____

Specifications Modern Home

(Continued from page 100)

Place 1" x 3" cross bridging in each span. Two rows in spans over 13'.

All exterior masonry walls are to be furred. Provide 4" x 6" wood bucks over openings in masonry walls. Provide 1" x 4" furring strips around all window openings for curtain rod nailing blocks.

Roof boards to be 1" x 6", double nailed.

All window frames and sash to be stock, 1 3/4" sash. Lugs on top sash only. Mill to furnish and place the Pullman balances for Bedroom No. 1 and Recreation room sash.

Main stairs to have 7/8" birch raisers, 1 1/8" oak treads, and 1 1/4" birch stringers, with iron stair railing by others.

Basement stair to be of plank treads and stringers, 1" pine risers, and 2 x 4 handrail.

Door frames for brick to be 1 1/4". All exterior woodwork of window trim and door frames to be of white pine. Entrance door to be 2 1/4". All other exterior doors to be 1 3/4". Interior doors, except as noted, to be single panel Miracle type for enameling. Doors 2'-8" and wider to be 1 3/4", doors 2'-6" and less to be 1 3/8". Basement doors to be five cross panel pine. Garage door to be 1 3/4" pine with raised moulding and raised panel.

Rough floors to be 1" x 6", double nailed; lath strip for first floor. Lay one thickness of 1 1/2" building felt over rough floors.

Kitchen, rear hall, and powder room to have 7/8" x 2 1/4" T & G pine floor for linoleum. All other floors to be 7/8" x 2 1/2" T & G clear red oak except wood block floors in bedrooms over garage to be laid in mastic over slab.

Fur out for coves and arches. Frame for warm air heat ducts.

Place the 1" Celotex on the roof boards over the recreation room.

Set grounds for plastering, but none required for doors and windows.

Interior trim to be stock and of sap gum, excepting window sills which are to be of birch. Trim omitted on doors and windows (excepting windows in bath and recreation rooms).

Carpenter to place all trim hardware.

Furnish and place a wood slat deck on the portion indicated on the roof over the living room.

Provide 1 3/8" coat rods and three shelves in each closet.

Partitions in basement to be of 2" x 4" cross framing covered with 1/4" 3-ply fir plywood on a 1" x 4" base.

Furnish and place one Hess medicine cabinet with 18" x 28" mirror, and one with 16" x 22" mirror for powder room.

PLUMBING

BATHROOM: Briggs "Beautyware" bath tub, 5'-0" white and black colored acid-resisting enameled for recess, with rim seat and front panel. To be hung from a Lucke Leakproof Tub Hanger.

Kohler lavatory, 20" x 24" white acid-resisting enameled apron with drain and chromium plated overflow, on two chromium plated legs.

"T/N" closet, white vitreous china one-piece, quiet-action, non-overflow, angular design; white sheet covered extended back seat and cover.

Furnish and place one 36" x 36" Fiat terrazzo shower receptor for tile walls complete with floor drain and chromium plated strainer. Speakman head. Lehman plate glass and chromium plate shower door.

POWDER ROOM: Weil-McLain lavatory, 17" x 19" Tuscan colored acid-resisting enameled shelf-space apron, on concealed hangers. "T/N" water closet.

KITCHEN: Standard Sanitary sink.

BASEMENT: Weil-McLain "Shelfon" 3-part laundry tray, 24" x 72" Granitine.

Everhot "Senior" Automatic Gas Water Heater, 30 gallon capacity.

Goder incinerator.

HEATING

Garage and laundry are to be heated.

Furnish and place one A.G.A. approved Bryant gas-fired winter conditioning unit complete with aluminum draft-diverter and aluminum flue connection of the same diameter as the connection on the unit and provide summer switch.

(Continued to page 182)

MORE GLASS

MORE LIGHT, BETTER VISION

By means of a Photo Electric Cell, the Pittsburgh Testing Laboratory conducted a test for Fourco Glass Company, which disclosed that an undivided window transmits 14.1% more light than a window divided into twenty panes. Applied to different types of windows the estimated percentage varies from 8.1% to 30%. With the growing demand for a more generous use of glass in the modern building, we suggest that you consider the advantages of one-pane windows.

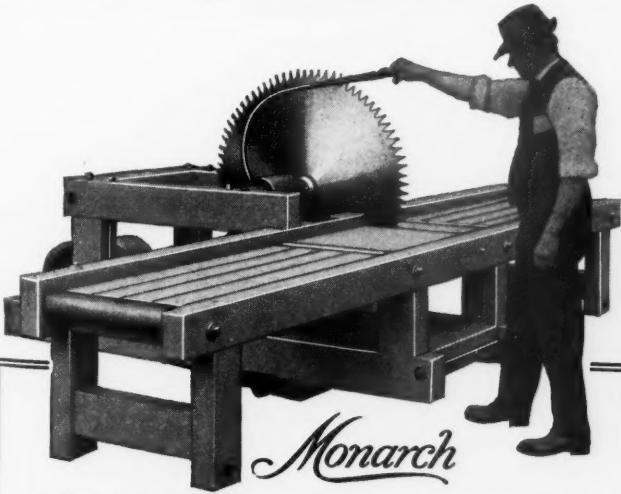
*Specify One-Pane Windows
Glazed with*



EASY ON THE EYES

FOURCO GLASS CO., CLARKSBURG, W.VA.

Branch Sales Offices NEW YORK • CHICAGO • FT. SMITH, ARK.



HEAVY "NEW MODEL" Cut-off Saw Table No. 32

Put this husky machine on your next job—wherever it is. Watch it save you money in time and labor as it eats up the work fast as you feed it—cutting timbers up to 15" square, 14" x 18", etc.

We can supply this saw table with either gasoline engine or electric motor drive. The saw frame can be locked in position for ripping. (Ripping table may be had at extra cost.)

The price of this Modern Monarch—(including 42" saw)—without power is:

\$228.00

f.o.b. Hackettstown, N. J.

This is only one of our many MONARCH Wood-working machines especially designed for contractors and builders. Send for our complete catalog.

AMERICAN SAW MILL MACHINERY CO.

Makers of Woodworking and Saw-Mill Machinery
60 MAIN STREET

HACKETTSTOWN, N. J.

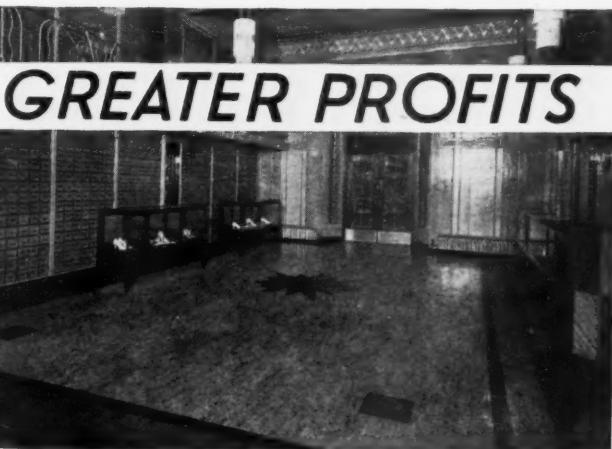
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**JAEGER'S
10S BRIDGE
BUILDER**

fastest selling, fastest performing mixer--on the road, on the job!

Trails at 35 m.p.h. on two pneumatic tires, Timken bearings--loads and discharges faster, even with stiffest concrete--end discharge cuts cost of placement in the forms. Also built in 75 size. Get new Catalog and prices.

The JAEGER MACHINE Co.
521 Dublin Avenue
Columbus, Ohio



GREATER PROFITS

FROM A NEW FLOORING IDEA

FOR
HOMES,
OFFICES,
CHURCHES,
HOSPITALS,
SCHOOLS,
PUBLIC
BUILDINGS

Now—a quality rubber-tile flooring—pre-set on felt—for modernization or new construction of all kinds—costs no more than good grade linoleum. Wide range of colors and designs. Conveniently packed. Exceptionally easy to lay. Suggest it to your prospects. A good profit on every installation. Write for details and illustrated booklet showing colors and patterns.

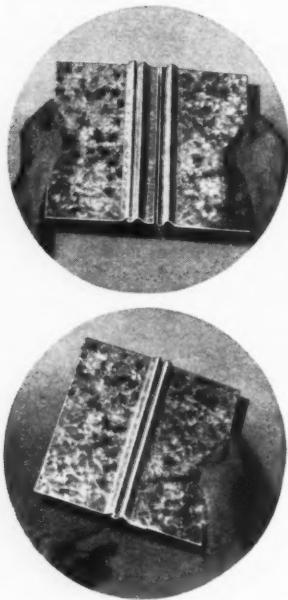
WRIGHT RUBBER PRODUCTS COMPANY
1603 LAYARD AVE.

RACINE, WIS.

WRIGHT RUBBER TILE

It's a "SNAP" to Lay Edwards LOXSEAM

STEEL ROOFING



NOTE how easily the sample pieces of Loxseam "snap" together making a wind-and-water-tight union. See how the interlocked piece covers and protects the nails and nail holes in the flange. That's how simple it is to apply Loxseam on the job — whether the sheets are five feet long, or twelve. At least twice as fast as other types of sheet metal roofing — half your labor costs saved.

And what a roof! As tight as a solid sheet from gutter to ridge. It's fireproof, lightning proof, storm tight. Water can't blow or syphon through the seams.

Write for large demonstration samples, literature and Catalog 92. Send roof measurements for estimate.

THE EDWARDS MANUFACTURING CO.
542-562 Eggleston Ave. Cincinnati, Ohio



Also Lowers Construction Costs

With precision units of 20% lighter weight in single, double and triple sizes. These multiples offer advanced hollow ashlar wall construction at cost level of frame. Faced and colored units in 40 different shades and textures offer wide selection for beautiful, attractive exteriors.

Make your own brick and these new DUNSTONE units and save up to 50% on your requirements. These materials also offer big savings in construction. Sell your surplus production at big profits like manufacturers in Milwaukee, Kalamazoo, Newport News, Goldsboro and many others.

Get the facts. Learn about the outstanding progress these manufacturers are making. Write for "4 Keys to Manufacturing Success" now while your territory is still open.

**W. E. Dunn
Mfg. Co.**

450 West 24th St.,
Holland, Mich.



Specifications Modern Home

(Continued from page 178)

Registers to be Hart & Cooley directional flow grilles. All supplies and returns, excepting those in the living room, dining room, and first floor hall to be equipped with dampers. No floor registers permitted. Supply ducts to be from 6'-6" to 7'-0" above the floor. No joist or stud linings permitted.

System to be of the trunk line type with rectangular ducts. Ducts in basement to be equipped with quadrant volume damper to regulate independently the volume of air delivered from each supply outlet. Provide two supplies and returns from living room and at least one supply and one return from each other room and hall. No returns from kitchen, bath, and lavatory. Risers to be of No. 26 gauge galvanized prim sheets. Horizontal ducts up to 20" to be No. 26 gauge while those over 20" are to be No. 24 gauge.

SHEET METAL

16 oz. copper rectangular downspouts, gutters, and flashing. Furnish and place the conductor heads where shown, flashing both sides of the masonry walls. Provide the 16 oz. copper roof vents where indicated. Range vent not required. Provide galvanized iron clothes chute with openings as shown. Provide metal flashing at step onto roof from recreation room.

ROOFING

Furnish and place three-ply built-up asphalt roof over all flat roof surfaces. Flash up parapet wall and secure with lath strip. Same to be 1-30 lb. and 2-15 lb. sheets, and fully mopped with hot asphalt.

All roofs to be guaranteed for five years.

WIRING

Wires to be duplex single braided Habirshaw or Ravel Cord, placed in thin-wall galvanized steel tubing conduit.

Provide Square D service switch.

Each light and switch to be equipped with steel outlet box. H & H toggle switches and brass plates. Chromium plates in kitchen, bath and lavatory.

Furnish front and rear door buttons, terminating at Duo Chime. Provide electric door opener for rear basement door at laundry controlled by push button in kitchen.

Furnish and place on Moder No. 113 ten inch "Pacific Breeze" Pryne kitchen ventilating fan complete with louvres, and No. 124 extension.

Radio outlet of power, aerial under roof, and ground.

Furnish and place 'phone outlets where indicated.

LATHING AND PLASTERING

Basement ceiling to be plastered. Metal lath over furnace to be 9' x 15'.

Place 3 4-lb. metal lath over furnace, garage ceiling, cove, arches, bathroom wainscot, and living and dining room ceilings.

All outside walls to receive $\frac{1}{2}$ " Insulite Lok-joint lath.

All exposed first and second floor ceilings will be insulated with 4" of Rockwool.

Rock lath for all other walls and ceilings.

Carpenter will fur out for all coves and arches.

Three-coat plastering work.

Knapp No. 31 corner beads for all doors and windows excepting windows in recreation room and bath, which windows will have wood trim.

Metal corner beads for all exposed corners. Metal lath shoes in corners of all rooms.

GLAZING

Place full length plate glass mirrors on doors where indicated to be set in felt.

Furnish and place 7/16" black Vitrolite on the fireplace face.

Place $\frac{1}{4}$ " polished plate glass for the large center light in the recreation room window. Place $\frac{1}{4}$ " beveled plate glass mirror over the mantel.

Basement glass to be "B." Balance of glass to be double strength "A" labeled, Libbey-Owens.

TILE

Provide fill for floors consisting of one part non-staining cement to three parts of white sand.

Bathroom floor to be of $1\frac{1}{2}$ " x $1\frac{1}{2}$ " colored ceramic tile.

(Continued to page 186)

American Builder, October 1937.

37.
185

Install Tile-Tex



for
LASTING
BEAUTY AT
LOW COST

Flexible
WALL TILE

Tile-Tex Decorative Wall Tile is easily applied in old or new buildings. Made in a wide range of colors and gives a permanent wall of lasting beauty at low cost. Ideal for Bathrooms, Kitchens, Stores, Barber Shops, Beauty Shops, Public Buildings, Restaurants, Bars and Lobbies.

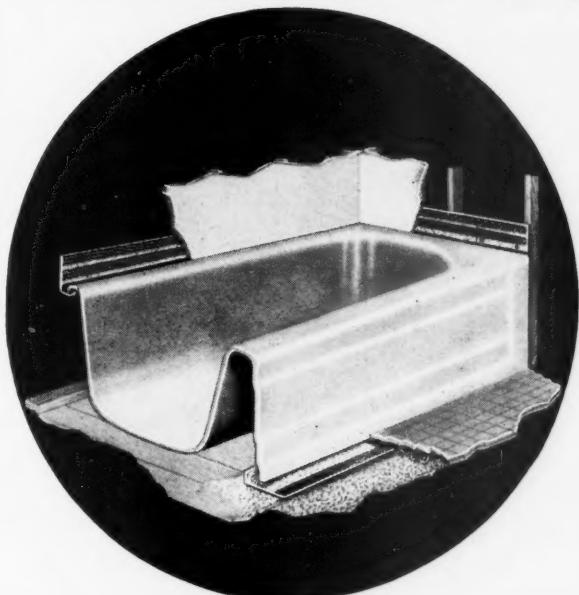
Tile-Tex is a unit-laid wall tile that will not craze, crack, warp or mar. Can be applied right over plaster walls or wall board.

Write us today stating whether you are interested in a dealer proposition or if you want information for prospective home builders. Free literature will be sent promptly.

THE TILE-TEX COMPANY
1229 McKinley Avenue Chicago Heights, Illinois

Decorative WALL TILE
TILE-TEX
Resilient FLOOR TILE

Insist on
Lucke Leak-Proof Tub Hangers
to Get More House for the Money



Protect your bath Tubs against leaks at tub edges for all time. No Sag—No cracks—No Leaks Once Installed—No repair expense. Adjustable and Adaptable to all built-in baths. Guaranteed Leak-Proof. Catalog on request.

Patented & Mfg. by

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BOX 177 WILMETTE, ILL.

●The most convincing argument for the use of Samson Spot Sash Cord is the cord itself. Examine its construction. Compare it with others. Then you will understand why leading architects and builders always specify it when they want the most durable material for hanging windows. They know that it is made in only **one grade** which can be quickly distinguished by the Colored Spots—our trade-mark. Insist upon Samson Spot Sash Cord and be **sure** of the best.

In addition to Samson Spot, we manufacture other brands of sash cord to meet all requirements for quality and price; also braided cord of all kinds and sizes, including awning line, mason's line, shade cord, venetian blind cord, etc. Samples gladly sent upon request.

SAMSON CORDAGE WORKS
BOSTON, MASS.

SAMSON SPOT SASH CORD

RIGID, STRONG, DURABLE

Parks' machines have always been designed for utmost strength and least possible excess weight. Low in operating cost and initial price.

MODEL "A"
PLANING MILL
SPECIAL

Rip and cross-cut saw, 22" band saw, 12" jointer, tenoner, hollow chisel, mortiser and borer, swing cut off saw, reversible spindle shaper and sand disc.

12" BENCH PLANER

Planes material up to 12" wide and 1" thick. Maximum cut 1 1/2". Takes pieces as short as 6" and as thin as 1/16". Bearings highgrade. New Departure ball bearings. Chip breaker and pressure plate. 1" diameter head and feed rolls. Power: 1 1/2 to 2 H.P. Weight 300 lbs.

PARKS
WOODWORKING MACHINES

Complete line of individual and combination Machines
Good Woodworking Machines Since 1887
THE PARKS WOODWORKING MACHINE CO.
Dept. BL-10 1524 Knowlton Street Cincinnati, Ohio



Architects and decorators specify Lightoliers for handsome looks and equally handsome performance. Authentic in style, a joy to the eye, they "get in their real work" after sunset, fusing rooms and furnishings into alluring ensembles.

Visit your Lightolier dealer. He'll welcome the opportunity to show you the many moderately priced new styles designed to make your home more lovely through Creative Lighting.

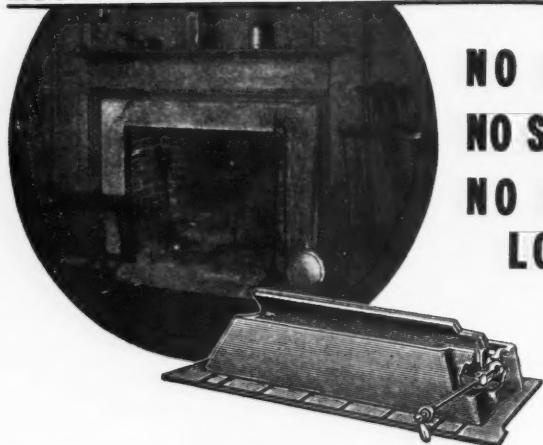
Plan Your Lighting When You're Planning. Write Dept. 10 for a free copy of "The Charm of a Well Lighted Home."

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ESSENTIAL TO HEATING EFFICIENCY



**NO DUST
NO SMOKE
NO HEAT LOSS**

PEERLESS *dampers*

To be sure the fireplace operates with 100% efficiency install a PEERLESS DOME DAMPER. Peerless dampers seal the chimney flue when the fireplace is not in use—this is essential to efficient operation of modern heating and air conditioning installation.

Peerless dampers are available in three styles—rotary, poker and chain control. All built to last a lifetime, of heavy stove plate cast iron.

OTHER PEERLESS PRODUCTS

Fireplace fixtures—ash dumps—coal windows—ash pit doors—garbage receivers—radiant gas heaters—Gas Conversion Burners and Stokers. Details and prices on request.

PEERLESS MANUFACTURING CORP.
1400 W. Ormsby Ave. Louisville, Ky.

Specifications Modern Home

(Continued from page 182)

Wainscot in the bath proper to be 5'-0" high and of 4" x 4" colored matt glazed tile. Tile to extend around the medicine cabinet to a height of 6'-8" and a width of 36". Base is not to be coved. Wainscot to have a $\frac{1}{2}$ " figured border strip. Cap piece to be 4" x 4" bull nose.

The tile in the shower stall is to be 6'-0" high with 4" x 4" bull nose cap.

All oak floors are to be filled with paste filler and to receive two coats of varnish. No floor finish required in kitchen, rear entry, powder room, and bath.

No wall or ceiling decoration in the basement or garage.

The walls of the living room, dining room, stair hall, and bedroom passage are to be primed with lead and oil, and then to receive two coats of lead and oil (flat). Walls then to be starched.

The walls and ceilings of the kitchen, rear entry, powder room, and the walls and ceilings above the wainscot of the bath are to receive one coat of lead and oil, size, one coat of under-coater, and finished with one coat of enamel, brush stippled.

Bedroom walls to be glue sized and then to receive wallpaper. Knotty pine paneling on walls of recreation room.

Ceiling in recreation room is of pine, and is to be stained, shellacked and waxed.

All other plastered wall and ceiling surfaces not particularly mentioned to receive hard oil and calcimined.

Register faces of hot air ducts and switch and base plug plates to be painted to blend with the surfaces upon which they occur

KITCHEN CABINETS: Hoosier.

SCREENS: Copper.

INSULATION: 4" Rockwool for all exposed ceilings excepting over the recreation room and on garage, bar, and passage ceiling. $\frac{3}{8}$ " Spray-O-Flake for all outside plastered walls and calcine paint finish.

Homes Are Bought on a Rising Market

(Continued from page 71)

during the boom years when building volume reached unprecedented totals.

Today we are again in a period of rising rents and rising volume of business—bringing more buying power to prospective home customers. In some sections the price rise temporarily went above the rent curve, which resulted in a temporary recession. According to well informed building observers, this will merely produce a larger volume of construction later on, for the need for a vast number of new homes still exists. According to William C. Bober, building economist and statistical expert, the United States requires at least 400,000 homes a year for new families, and another 100,000 to replace destroyed or demolished homes. He estimates that we began the year 1937 with an accumulated shortage of at least 1,500,000 homes. To be as well housed at the end of 1942 as we were in 1929, we must build a total of at least 820,000 homes per year in the next five years.

One of the contributing factors in the increasing pressure for additional houses is the population shift back to the cities. There was a strong trend of population from cities to farms during the depression, it being estimated that more than 250,000 went back in 1932 alone. But by 1935 the movement was reversed and some 375,000 in that year returned to the cities, according to Department of Agriculture figures. This trend increased in 1936 and has greatly added to the demand for city and suburban housing. The one unescapable conclusion of those who have studied the building cycles, population movements, rents and building costs is that the longer an adequate volume of construction is put off, the greater will be the boom later on. As shown in the accompanying chart, construction has only begun to recover. Volume is still about one-third of the '26 to '29 level. At the same time population is increasing, the marriage rate has spurted sharply upward, old houses are becoming more and more obsolete. As the pressure for new houses becomes more and more acute and rents move still more sharply upward, building volume will continue to expand.

\$190⁰⁰ in 8 DAYS STUCCO SPRAYING



Philip J. Herzberger writes:
Thought you would like to know how I am getting along. Well, my first home was Colorcreted and this job brought me three more homes to Colorcrete which I did in eight days, netting me a profit of \$190.00 and now I have three homes and a basement ahead to Colorcrete.

It fuses a waterproofed plastic mixture on any masonry. It fills all cracks and can be applied in any thickness desired and in 30 colors and shades. Fully proven by over twelve years actual use under all conditions and every climate.

LARGE WAITING MARKET

Owners everywhere want to enhance present values and make their buildings more attractive and livable. The better builders are striving for greater permanence, beauty and salability in their new construction. With COLORCRETE Stucco Spraying, you can supply this waiting market and can offer permanent, colorful surfacing at amazingly low cost. Operators report costs of 2c and up per sq. ft. and sell up to 7c. Some have paid for their equipment from first couple of jobs. Machine capacity up to 600 sq. ft. per hour. Get the facts. The new COLORCRETE Books tell the whole story. Write today. It may mean business independence for you.



COLORCRETE INDUSTRIES, INC.
500 Ottawa Ave. Holland, Mich.

REX
MODERN MIXERS

THE ONLY MIXERS WITH ALL THESE MONEY-SAVING POINTS

1. Pressed Steel Drum Heads
2. Pressed Steel Timken Drum Rollers
3. Non-by-Pass Water Control
4. Engines Mounted "Above the Dirt Line"

That's why they'll mix at lower cost per yard—through more yardage-years of service.

Sizes—5-S, 7-S, 10-S, 14-S. Two- or four-wheel mountings, end or side discharge types. Send for free catalogs!

CHAIN BELT COMPANY, 1621 West Bruce Street, Milwaukee, Wis.



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Speed Mixers

STEEL IN STOCK

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PRODUCTS INCLUDE:
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NOW YOU CAN MORTISE A DOOR IN ONE MINUTE

WAPPAT Model D Lock Mortiser cuts complete mortise (including face-plate recess) in 45 doors an hour.—Pays for itself on first 350 doors.—Always does a perfect job.—Every operation automatic.

A patented WAPPAT feature makes this machine twice as fast as any other. You don't have to go over all your doors once for the barrel mortise and go over them again for face plate. Neither do you have to change cutters.

You will be interested in the WAPPAT portable electric door plane too. It's ten times faster than planing doors by hand.

Let us give you a convincing demonstration. No obligation.



Become the door specialist in your community. Equip yourself with these tools. Take contracts to fit and mortise doors at prices no contractor can refuse. Make big money. Ask about time payment plan.

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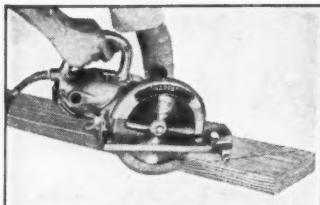
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This NEW Electric Saw Was Built for YOU



Designed for true one-hand operation! A light, inexpensive electric handsaw with sufficient cutting capacity to handle all your work. Frames hip-jacks out of full 2" lumber. Brand new! Write for detailed information on the WAPPAT Model 1-A Saw.

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For Mortarless Concrete Blocks

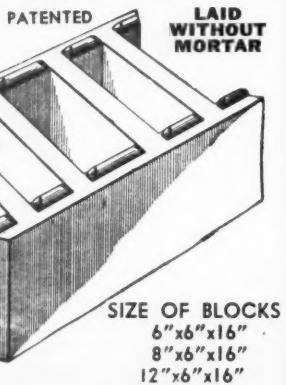
Vertical, reinforced, concrete columns, spaced every 24" on center are poured within the wall.

Build for a Century
Not for a Decade

Mortarless Masonry Construction is unequalled for economy and permanency.

Write for catalog and full particulars of our machines.

Mortarless Tile Mach. Co., Inc.
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MAKE EXTRA PROFITS ON

DENNIS
DOUBLE CUSHION
BRONZE WEATHER STRIPS

*Easily Installed Without
Removing Sash or Doors!*

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APPLY WINTER-PANES

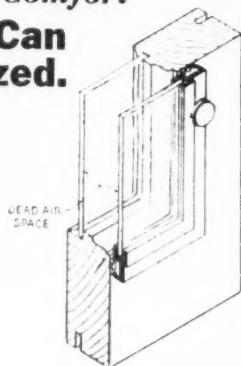
THE MODERN STORM SASH

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NOW—Any Window Can Be Easily Double Glazed.

WINTER-PANES keep heat in—cold out. That "dead air space" saves fuel and eliminates the nuisances of condensation and frosting. Write for circular giving complete description.

PROTEX WEATHERSTRIP MFG. CO.
2108 West 68th St.
Chicago, Ill.



"How Much"—Installed?

(Continued from page 89)

more senses becoming a machine for living.

Mass production methods involved in the construction of oil burners and other types of heating equipment, kitchen cabinets, plumbing units and building specialties are constantly working toward lower costs. In the case of refrigerators, the cost has come down 100 per cent and efficiency increased 50 per cent.

Joining the advances in structural materials and in mechanical equipment is the marked progress that has been made in more efficient home planning. No index of materials or construction costs shows this factor. Yet it is of enormous importance. There are numerous instances in this issue of houses with a cubical content one-third or more less than a house of the same general classification built in 1926, yet vastly more livable, comfortable and efficient. Floor space is much more efficiently and economically used today than ever before. The home buyer of 1937 is getting the benefit of a cumulative experience in planning and design technique that gives more value for the money.

Improved Equipment

(Continued from page 105)

chines that perform a variety of necessary operations have been developed to supplement the stationary woodworkers that have long been extensively used in fixed locations. The modern wood-working machines, because of the variety of operations they perform, are an important factor in producing lower costs.

FLOOR SANDERS—Progress in floor sander equipment since 1926 has been noteworthy. Here again the use of lighter weight materials, such as aluminum, has made possible an easily handled machine, lighter in weight and smaller in size. At the same time motors have been improved so that the efficiency is greatly increased. In the case of one prominent manufacturer, chain drives have been replaced by V-type belt drives, moving parts have been enclosed. Greater capacity, lighter weight, make the new models far superior to the 1926 models. In the case of another manufacturer, the current model delivers 100 per cent more work than the 1926 machine. The $\frac{1}{2}$ H.P. motor has been replaced by a $\frac{1}{4}$ H.P. motor, and the entire mechanism is stronger, faster, lighter and completely enclosed.

TRUCKS AND TIRES—A fundamental improvement in the hauling of building materials has been the general use of pneumatic tires instead of solid tires. These permit greater speed and manufacturers have developed more powerful engines which result in greater efficiency. One prominent manufacturer estimates these two items alone have increased the average number of loads one truck can haul per day by 60 per cent. There has been a marked increase in the efficiency of dump type trucks, in tractor-trailer types and in the lightweight pick-up trucks so widely used by the smaller building operator. Reductions in the cost of such equipment since 1926, plus increase in the efficiency, have had a material effect on the cost of building operations.

ELECTRIC MORTISING MACHINES—Important economies are made possible by the use of the electric lock mortiser which will do this ordinarily laborious job in a fraction of the time required by hand. A few simple adjustments are made to establish the proper height and depth of mortise. The job is then done in approximately a minute. Other doors requiring the same dimensions can then be done with extreme rapidity. Another important machine is the electric door plane designed for quick and efficient planing, and fitting of doors, sash and transoms. It leaves a smooth edge either with or across the grain, which requires no sanding. Such a machine will cut $\frac{1}{8}$ -inch off a 7-foot hardware door in less than a minute.

OTHER SPECIAL TOOLS AND EQUIPMENT—Further economies are achieved in the modern home by the use of the electric weatherstrip groover which plows grooves in sash, doors or transoms, and the electric kerfing machine. Electric drills and hammers are an indispensable part of the modern job. A comparatively new development is the electric pipe cutter used by some builders in large operations to effect a large saving in cost. Stucco spray machines perform a needed economy. An improved screen tacker saves time and is also used in installation of certain types of insulation. Several new tools for cutting and trimming fibre board and wallboard are indispensable in the use of these new materials, and cut the cost of handling them.